CHAPTER 6

TRANSPORTATION AND CIRCULATION

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In May 2003, DKS Associates prepared the *Transportation Impact Analysis: DeWitt Government Center Facility Plan (2003-2010)*, which provides an assessment of project impacts on the local circulation network including roadways, transit services, and bicycle facilities. Current and future traffic conditions in the project vicinity were analyzed. The capacities of affected roads were evaluated to determine what improvements, if any, would be required to keep traffic conditions in the project vicinity within acceptable levels of service (LOS). A copy of DKS Associates' study is included as Appendix B of this EIR.

6.1 SETTING

The DeWitt Government Center Facility Plan project proposes construction, improvements, and limited demolition within the 180-acre DeWitt Center Study Area. The project area is located south of and adjacent to Bell Road, north of and adjacent to Atwood Road, and west of State Route 49 (SR 49). DKS Associates' traffic analysis addressed the area bounded by Bell Road to the north, Atwood Road to the south, Richardson Drive to the west, and First Street to the east. The study area also includes the detention facilities and other existing development west of Richardson Drive. These limits describe the developed portion of DeWitt Center. *Figure 6-1* shows the existing street system in this project vicinity. Access to DeWitt Center is provided by Richardson Drive, First Street, and F Avenue. Future plans include extension of Willow Creek Drive, which would provide a new access from SR 49 to DeWitt Center. Within DeWitt Center, A, B, and C Avenues run between First Street and Richardson Drive. F Avenue connects First Street with Atwood Road. SR 49 is a north-south highway approximately one-half mile east of Richardson Drive that connects the City of Auburn to foothill communities to the south and to Grass Valley/Nevada City to the north. SR 49 and Bell Road provide access to the project area from Interstate 80.

The *Placer County General Plan* establishes a roadway classification system to guide long range planning. Roadways are classified in this system based on their function and connections to other roadways. Classifications include local, collector, and arterial roadways. **Local streets** are those that provide direct access to adjacent land and connect to other local streets and larger roadways. Local streets typically carry very low traffic volumes. Richardson Drive, First Street, Professional Drive, Willow Creek Drive, and A, B, and C Avenues are all local roadways. Traffic from local streets is "collected" on **collector roadways** and carried to larger roadways. Collector streets generally carry light to moderate traffic volumes. In urban/suburban areas, major collector roadways will generally carry higher traffic volumes than minor collectors and thus require more right-of-way and have greater access restrictions. Atwood Road is an urban/suburban major collector between Richardson Drive and SR 49. West of Richardson Drive, Atwood Road is a rural collector. There is no written definition of a rural collector in the *Placer County General Plan*. The definition would generally be similar to an urban collector, only with slightly narrower right of way and possibly fewer left turn lanes. Bell Road is an urban/suburban minor arterial from the urban limits west of the project area to SR 49 and an urban/suburban major arterial between SR 49 and Interstate 80. Traffic from local and collector roadways feeds into **arterial roadways**, which provide connections to the State highway system and between communities and major activity centers. In urban/suburban areas, these roadways carry high traffic volumes and require substantial right-of-way. In rural areas the

traffic volumes may not be as high, but these roadways do serve as primary access routes for through travel.

DKS Associates' traffic impact analysis focused on eight intersections within the project vicinity that would most likely be affected by the DeWitt Government Center Facility Plan project. Based on projections provided by the Department of Facility Services, employment at DeWitt Center is not expected to increase significantly as a result of the proposed project. Therefore, the Placer County Department of Public Works determined that intersections on SR 49 could be excluded from the analysis. The intersections included in the analysis are:

- Richardson Drive at Bell Road
- First Street at Bell Road
- Professional Drive at Bell Road
- Richardson Drive at A Avenue
- Richardson Drive at B Avenue
- Richardson Drive at C Avenue
- Richardson Drive at Atwood Road
- First Street at Atwood Road

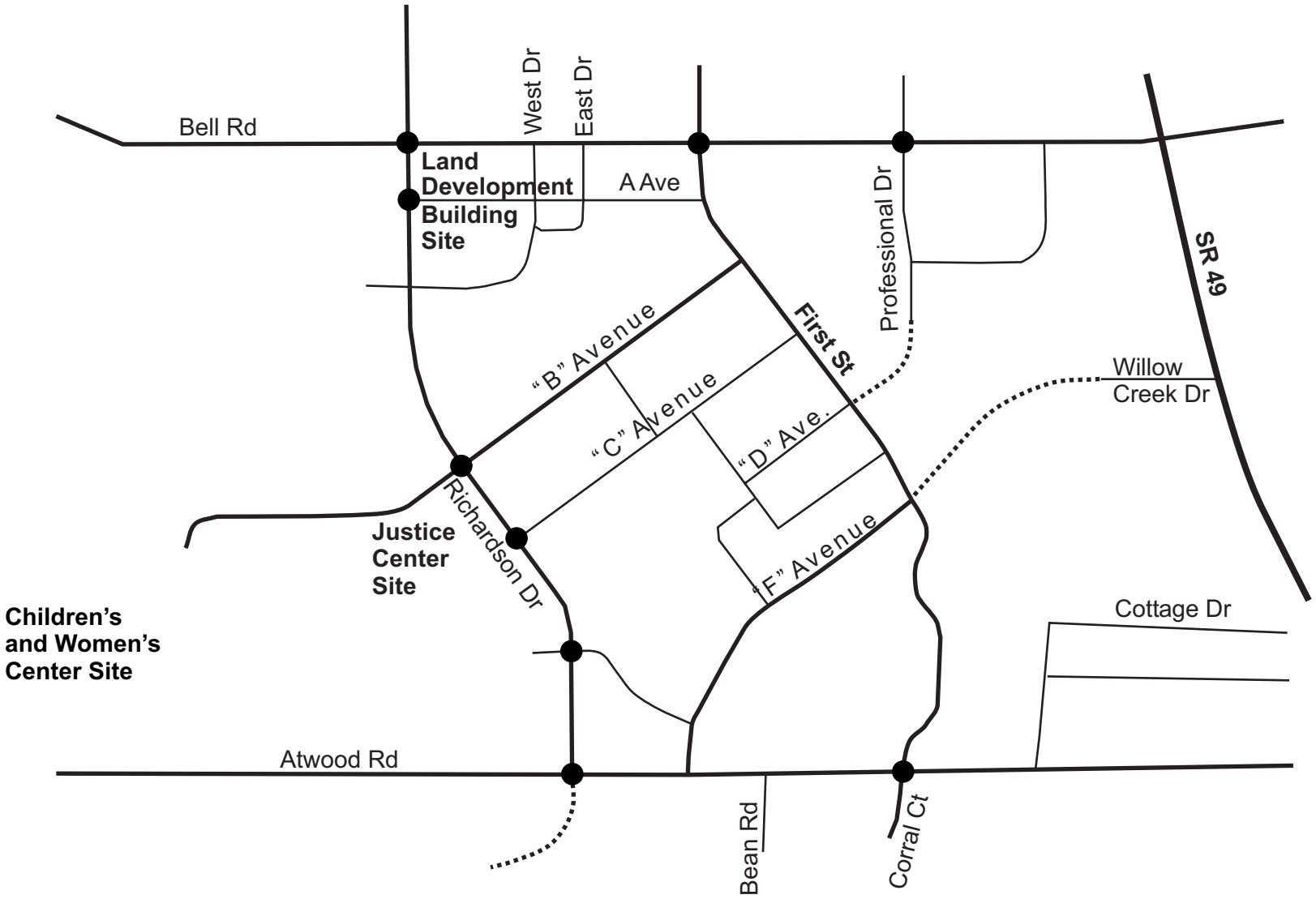
Existing Intersection Conditions

Traffic conditions are measured by determinations of "levels of service" (LOS), which are letter grades "A" through "F" that indicate the quality of traffic operating conditions. LOS determinations are based on a number of factors, including travel time and speed, safety, freedom to maneuver, and driving comfort and convenience. LOS E describes conditions approaching or at maximum capacity (DKS 2003). The *Placer County General Plan* and *Auburn/Bowman Community Plan* establish a minimum operating standard of LOS "C" except for within one-half mile of state highways, where the standard is LOS "D." Some intersections and roadway segments are identified in the *Auburn/Bowman Community Plan* as warranting exceptions to these standards. The exceptions are listed in Table 17 of the Community Plan, but none of the intersections evaluated in this study are included. The LOS definitions for signalized and unsignalized intersections are shown in *Tables 6.1* and *6.2*.

Table 6.1
Level of Service Definitions - Signalized Intersections

LOS	V/C[a]	Description
A	0.00-0.60	**Free Flow / Insignificant Delays:** No approach phase is fully utilized by traffic and no vehicle waits longer than one red indication.
B	0.61-0.70	**Stable Operation / Minimal Delays:** An occasional approach phase is fully utilized. Many drivers begin to feel somewhat restricted.
C	0.71-0.80	**Stable Operation / Acceptable Delays:** Major approach phases fully utilized. Most drivers feel somewhat restricted.
D	0.81-0.90	**Approaching Unstable / Tolerable Delays:** Drivers may have to wait through more than one red signal indication. Queues may develop but dissipate rapidly, without excessive delays.
E	0.91-1.00	**Unstable Operation / Significant Delays:** Volumes at or near capacity. Vehicles may wait through several signal cycles. Long queues form upstream from intersection.
F	>1.00	**Forced Flow / Excessive Delays:** Represents jammed conditions. Intersection operates below capacity with low volumes. Queues may block upstream intersections.

a V/C = volume-to-capacity ratio
Source: Circular 212, Transportation Research Board 1981



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● Traffic Study Locations

Future Roadway Extensions

Figure 6-1

STUDY AREA ROADWAYS

DeWitt Government Center
Facility Plan (2003 - 2010)
Placer County, California

Table 6.2
Level of Service Definitions - Unsignalized Intersections

Level of Service (LOS)	A	B	C	D	E	F
Average Delay per Vehicle (sec/vehicle)	0 to 10.0	10.1 to 15.0	15.1 to 25.0	25.1 to 40.0	40.1 to 60.0	> 60.0

Source: Highway Capacity Manual, Transportation Research Board 2000

Table 6.3 summarizes existing peak hour operating conditions for the study intersections. For one-way and two-way stop sign controlled intersections, DKS Associates calculated both "average" intersection delays and "worst movement" delays. Both of these delays were calculated because intersections of a major roadway and a minor cross-street can experience a very good overall average level of service while a relatively low number of vehicles on the side street may experience lengthy delays to find a gap and enter the major street. Four-way stops use average intersection delay as the basis for level of service calculations. Signalized intersections use volume-to-capacity (V/C) ratio as the basis for level of service calculations.

Table 6.3
Existing Level of Service

Intersection	Traffic Control	AM Peak Hour				PM Peak Hour			
		Average		Worst Movement		Average		Worst Movement	
		LOS	Delay/ V/C	LOS	Delay	LOS	Delay/ V/C	LOS	Delay
1: Richardson Dr at Bell Rd	2-way stop	A	3.2	B	12.3	A	3.3	B	13.1
2: First St at Bell Rd	2-way stop	A	4.3	D	28.1	A	3.7	C	19.6
3: Professional Dr at Bell Rd	Signal	A	0.53	—	—	A	0.42	—	—
4: Richardson Dr at A Ave	1-way stop	A	2.9	A	9.9	A	1.5	A	9.9
5: Richardson Dr at B Ave	4-way stop	A	8.3	—	—	A	8.7	—	—
6: Richardson Dr at C Ave	2-way stop	A	0.9	B	11.2	A	2.4	B	11.8
7: Richardson Dr at Atwood Rd	1-way stop	A	3.0	A	9.6	A	6.2	B	12.1
8: First St at Atwood Rd	2-way stop	A	1.4	C	17.8	A	2.6	C	22.2

Source: DKS Associates 2003

For all of the study intersections, existing traffic levels during peak AM and PM hours are at LOS A conditions. However, two intersections, First Street at Bell Road and First Street at Atwood Road, demonstrated "worst movement" traffic levels of LOS C and/or D. These two intersections provide a very good average level of service, however, some vehicles may experience prolonged delays when trying to enter either Bell or Atwood Road from First Street.

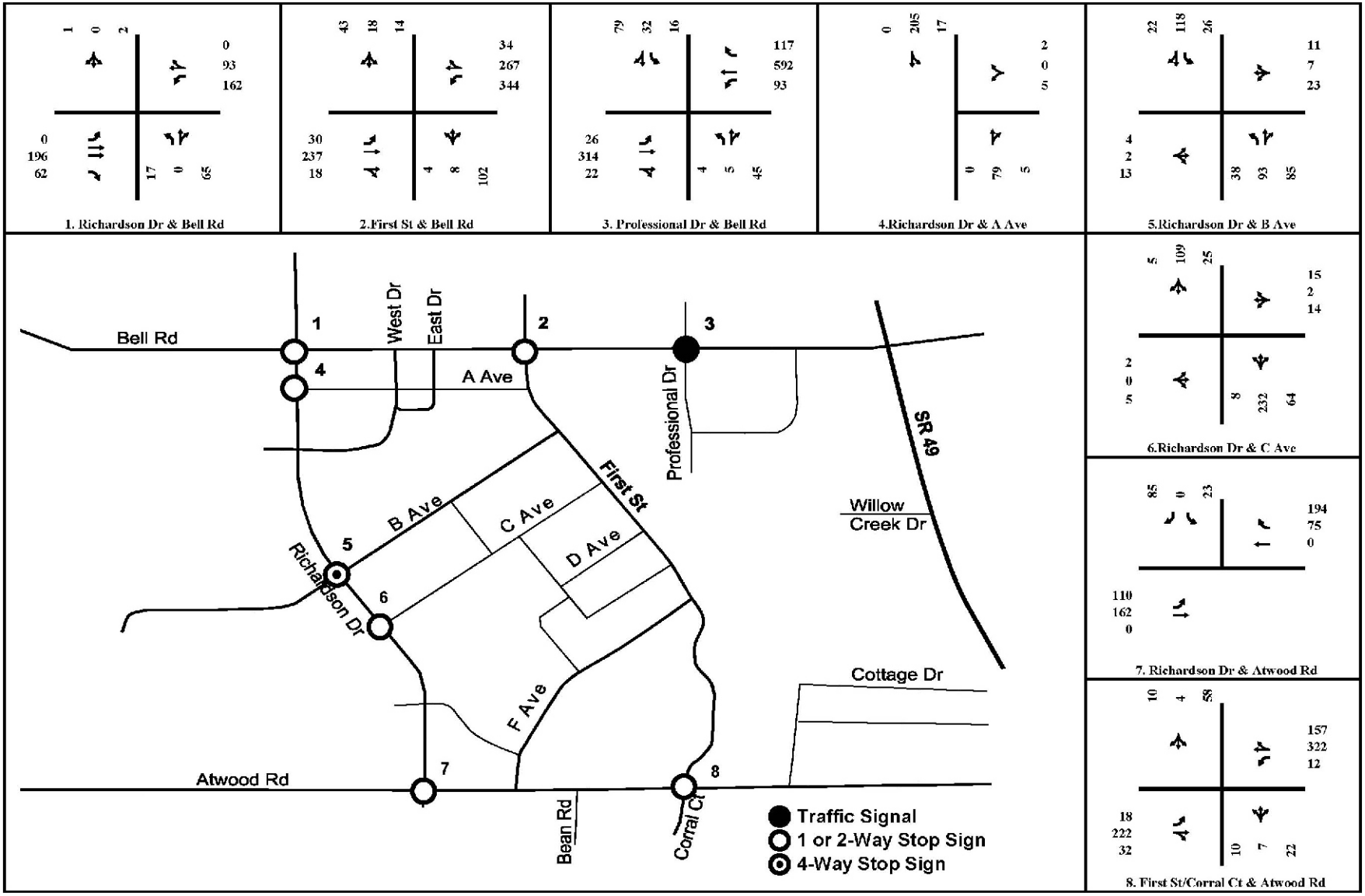
Figure 6-2 shows existing traffic volumes for the key study area intersections during the AM peak hour and *Figure 6-3* shows the same data for the PM peak hour.

In order to calculate existing trip generation for the project site, DKS Associates conducted a "cordon count" for all entrances and exits to DeWitt Center in the spring of 2002. *Table 6.4* shows existing daily and peak hour traffic volumes for these entrances and exits. These volumes reflect 2002 employment levels of 1,917 employees at DeWitt Center. Based on these traffic counts, DeWitt Center currently produces approximately 16,800 daily trips. While the counts include all visitors to DeWitt Center and tenants of the leased spaces, as well as employees, it is useful to express the total number of daily trips as a ratio to the number of DeWitt Center employees. It is assumed that this ratio will remain relatively constant over time. Therefore, this EIR assumes that traffic to and from DeWitt Center under no-project or with-project conditions will be approximately 8.77 daily trips per employee.

Table 6.4
Existing Traffic Volumes Entering and Exiting DeWitt Center

Location		AM Peak Hour (7:30 to 8:30 AM)				PM Peak Hour (4:30 to 5:30 AM)				Daily Volume
		Inbound		Outbound		Inbound		Outbound		
		Volume	Direction	Volume	Direction	Volume	Direction	Volume	Direction	
South of Bell Road										
	Richardson Drive	238	SB	52	NB	86	SB	228	NB	3,352
	North Entrance	27	SB	22	NB	22	SB	36	NB	631
	1st Street	437	SB	86	NB	123	SB	245	NB	5,118
	Subtotal	702		160		231		509		9,101
North of Atwood Road										
	Richardson Drive	303	NB	112	SB	102	NB	304	SB	4,043
	F Avenue	85	NB	40	SB	21	NB	83	SB	1,313
	1st Street	161	NB	54	SB	45	NB	122	SB	2,352
	Subtotal	549		206		168		509		7,708
	Total	**1,251**		**366**		**399**		**1,018**		**16,809**
	Trips per Employee (1,917 employees)	Inbound		Outbound		Inbound		Outbound		Total
		0.65		0.19		0.21		0.53		8.77

Source: DKS Associates based on traffic counts conducted in February and April 2002



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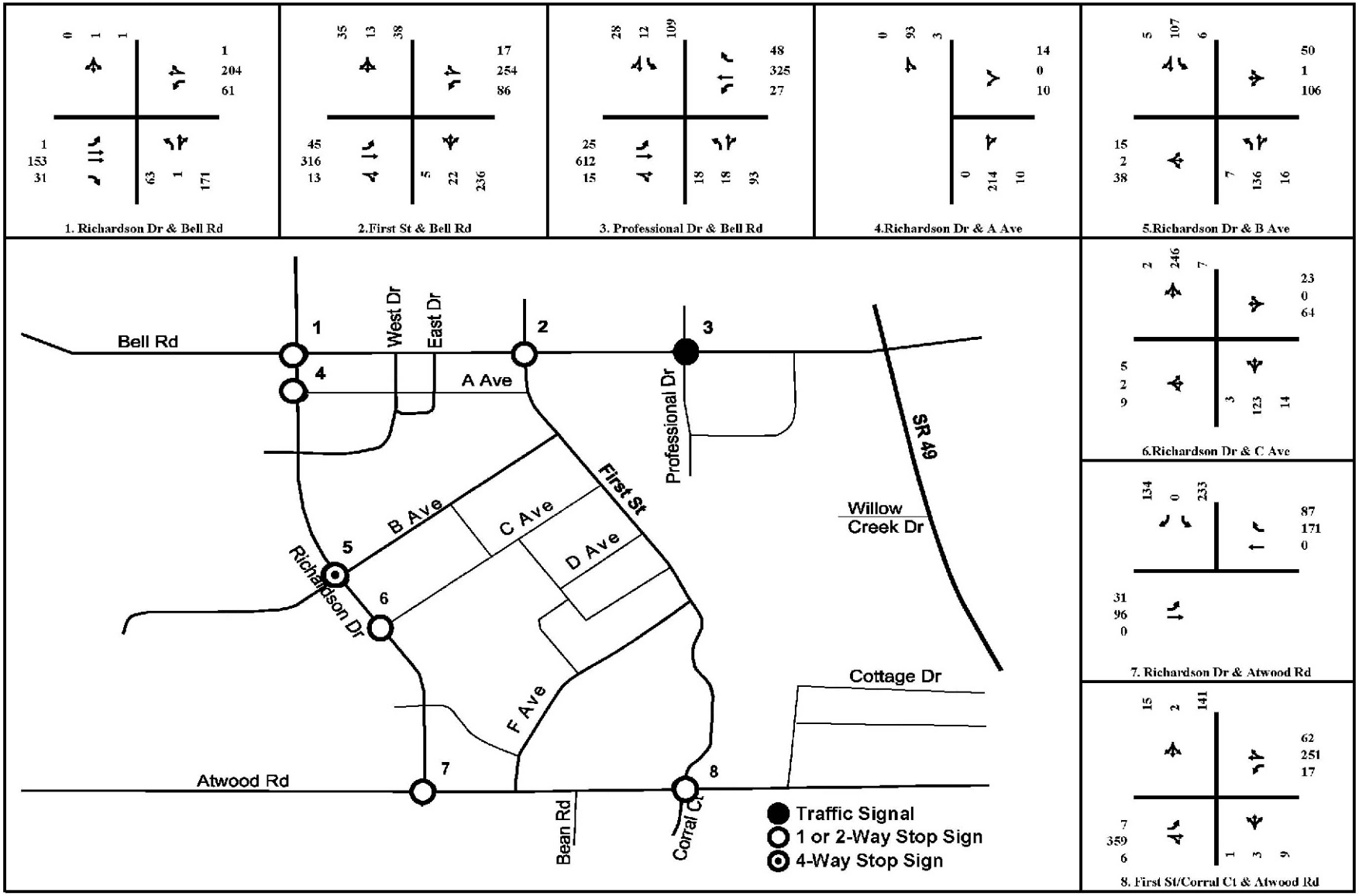
Source: DKS Associates

Figure 6-2

EXISITING CONDITIONS AM PEAK HOUR

DeWitt Government Center Facility Plan (2003 - 2010)

Placer County, California



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Source: DKS Associates

Figure 6-3

EXISTING CONDITIONS PM PEAK HOUR

DeWitt Government Center Facility Plan (2003 - 2010)

Placer County, California

The traffic count data shown in *Table 6.4* were used to estimate the distribution of trips that enter and leave DeWitt Center. *Table 6.5* shows the existing distribution of traffic to and from DeWitt Center.

Table 6.5
Existing Traffic Volume Distribution Entering and Exiting DeWitt Center

Location		AM Peak Hour (7:30 to 8:30 AM)		PM Peak Hour (7:30 to 8:30 AM)		Percent of Daily Volume
		Percent of Total Inbound Volume	Percent of Total Outbound Volume	Percent of Total Inbound Volume	Percent of Total Outbound Volume	
South of Bell Road						
	Richardson Drive	19.0%	14.2%	21.6%	22.4%	19.9%
	North Entrance	2.2%	6.0%	5.5%	3.5%	3.8%
	1st Street	34.9%	23.5%	30.8%	24.1%	30.4%
	Subtotal	56.1%	43.7%	57.9%	50.0%	54.1%
North of Atwood Road						
	Richardson Drive	24.2%	30.6%	25.6%	29.9%	24.1%
	F Avenue	6.8%	10.9%	5.3%	8.2%	7.8%
	1st Street	12.9%	14.8%	11.3%	12.0%	14.0%
	Subtotal	43.9%	56.3%	42.1%	50.0%	45.9%
	Total	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**

Source: DKS Associates based on traffic counts conducted in February and April 2002

Existing Transit Service

Two Placer County Transit (PCT) bus routes serve DeWitt Center. The Highway 49 Shuttle route provides hourly service along SR 49 and makes several stops within DeWitt Center. This route also serves the City of Auburn and provides a connection to PCT's Taylor Road Shuttle and their Auburn-to-Light Rail route. The North Auburn Loop route provides hourly service in the North Auburn area, with stops in DeWitt Center.

Existing Bicycle Facilities

Bicycle facilities in the project vicinity are very limited. Bell Road and Atwood Road are indicated as "on-street bikeways" on the Placer County Bikeway Map prepared by the Placer County Transportation Planning Agency. These roadways do not have signed or striped bike lanes but were determined to be appropriate for bicyclists to share the travel way with motor vehicles traffic or pedestrians.

6.2 REGULATORY FRAMEWORK

There are several plans, statutes, and regulations adopted by Placer County that will be used to evaluate the proposed project. The following policies, plans, and regulations cover the primary aspects of the transportation system (operations and design) and should be adhered to by the proposed project.

Auburn/Bowman Community Plan

The following *Auburn/Bowman Community Plan* policies related to transportation and circulation, found in the Transportation and Circulation Element, are applicable to the DeWitt Government Center Facility Plan project.

Goals V.B

1. Provide for a transportation system that supports the social and economic well-being of the people and environment of the plan area.
2. Provide safe and efficient transportation systems for residents of the plan area and others who use the systems.
3. Encourage and enable the use of public and private transit as well as other alternative modes of transportation. Expand public transportation opportunities to meet the needs of the plan area's residents, reduce traffic congestion, and improve air quality.
4. Encourage the use of transportation systems management (TSM) strategies – such as flex time, park and ride lots, etc. – to reduce peak-period traffic and total vehicle miles traveled (VMT).
5. Keep to a minimum the number of driveway encroachments along public roadways – particularly along major corridors.
6. Eliminate potential hazards and otherwise improve existing, substandard roads in the plan area.
7. Provide safe bicycle facilities along existing and proposed roadways.
8. Maintain roads, trails, and other transportation facilities at a standard which assures safe public use.
9. Provide adequate space for alternative modes of transportation within or adjacent to existing transportation corridors.

V.C.1 Rights-of-way for roads shall be wide enough to accommodate roadways, trails, bikeways, drainage, public utilities, landscaping, and suitable separations. Minimum right-of-way criteria for roadways throughout the Plan area are shown in the Background Report.

V.C.3 Off-street vehicular parking shall be provided by all new development.

V.C.5 The level of service (LOS) minimum standard for roadways and intersections throughout the Plan area shall generally be LOS C. Exceptions to this standard are listed in Table 17 [of the *Auburn/Bowman Community Plan*]. Land development improvement requirements shall be set to sustain LOS C at all roadway and intersection locations for as long as possible.

V.C.6 Land development projects shall be approved only if the identified LOS standards can be sustained on the Plan area road network and intersections after:

a. Traffic from approved projects has been added to the system, and

b. Improvements funded by this program are in place.

NOTE: This will sometimes result in temporary violation of level of service (LOS) standards until adequate funding has been collected for the construction of program improvements.

V.C.13 As development of the Plan area occurs, dedication of public rights-of-way shall be required for the roads, trails, and bikeways identified in the Plan. Dedication of right-of-ways as well as construction of such roads, trails, and bikeways shall be required as conditions of approval placed on land development projects.

Placer County General Plan

The *Placer County General Plan*'s Transportation and Circulation Element contains policies governing development within unincorporated Placer County. Below is a list of policies which are applicable to the DeWitt Government Center Facility Plan project.

Goal 3.A To provide for the long-range planning and development of the county's roadway system to ensure the safe and efficient movement of people and goods.

3.A.2 Streets and roads shall be dedicated, widened, and constructed according to the roadway design and access standards generally defined in Section I of this *Policy Document* and, more specifically, in community plans and the County's *Highway Deficiencies Report.* Exceptions to these standards may be necessary but should be kept to a minimum and shall be permitted only upon determination by the Public Works Director that safe and adequate public access and circulation are preserved by such exceptions.

3.A.3 The County shall require that roadway rights-of-way be wide enough to accommodate the travel lanes needed to carry long-range forecasted traffic volumes (beyond 2010), as well as any planned bikeways and required drainage, utilities, landscaping, and suitable separations. Minimum right-of-way criteria for each class of roadway in the county are specified in Part I of this *Policy Document* (see page 29).

3.A.6 The County shall require all new development to provide off-street parking, either onsite or in consolidated lots or structures.

3.A.7 The County shall develop and manage its roadway system to maintain the following minimum levels of service (LOS).

a. LOS "C" on rural roadways, except within one-half mile of state highways where the standard shall be LOS "D".

b. LOS "C" on urban/suburban roadways except within one-half mile of state highways where the standard shall be LOS "D".

The County may allow exceptions to these LOS standards where it finds that the improvements or other measures required to achieve the LOS standards are unacceptable based on established criteria. In allowing any exception to the standards, the County shall consider the following factors:

- The number of hours per day that the intersection or roadway segment would operate at conditions worse than the standard.
- The ability of the required improvement to significantly reduce peak hour delay and improve traffic operation.
- The right-of-way needs and the physical impacts on surrounding properties.
- The visual aesthetics of the required improvement and its impact on community identity and character.
- Environmental impacts including air quality and noise impacts.
- Construction and right-of-way acquisition costs.
- The impacts on general safety.
- The impacts of the required construction phasing and traffic maintenance.
- The impacts on quality of life as perceived by residents.
- Consideration of other environmental, social, or economic factors on which the County may base findings to allow an exceedance of the standards.

Exceptions to the standards will only be allowed after all feasible measures and options are explored, including alternative forms of transportation.

3.A.10 The County shall strive to meet the level of service standards through a balanced transportation system that provides alternatives to the automobile.

3.A.12 The County shall require an analysis of the effects of traffic from all land development projects. Each such project shall construct or fund improvements necessary to mitigate the effects of traffic from the project. Such improvements may include a fair share of improvements that provide benefits to others.

3.A.14 The County shall assess fees on new development sufficient to cover the fair share portion of that development's impacts on the local and regional transportation system. Exceptions may be made when new development generates significant public benefits (e.g., low income housing, needed health facilities) and when alternative sources of funding can be identified to offset foregone revenues.

Goal 3.B To promote a safe and efficient mass transit system, including both rail and bus, to reduce congestion, improve the environment, and provide viable non-automotive means of transportation in and through Placer County.

3.B.3 The County shall consider the need for future transit right-of-way in reviewing and approving plans for development. Rights-of-way may either be exclusive or shared with other vehicles.

Goal 3.D To provide a safe, comprehensive, and integrated system of facilities for non-motorized transportation.

3.D.1 The County shall promote the development of a comprehensive and safe system of recreational and commuter bicycle routes that provides connections between the county's major employment and housing areas and between it's existing and planned bikeways.

3.D.4 The County shall promote non-motorized travel (bikeways, pedestrian, and equestrian) through appropriate facilities, programs, and information.

Goal 6.G To integrate air quality planning with the land use and transportation planning process.

6.G.1 The County shall require new development to be planned to result in smooth flowing traffic conditions for major roadways. This includes traffic signals and traffic signal coordination, parallel roadways, and intra- and inter-neighborhood connections where significant reductions in overall emissions can be achieved.

6.G.3 The County shall encourage the use of alternative modes of transportation by incorporating public transit, bicycle, and pedestrian modes in County transportation planning and by requiring new development to provide adequate pedestrian and bikeway facilities.

Placer County Level of Service (LOS) Standard

Under the *Auburn/Bowman Community Plan* and the *Placer County General Plan*, the County has set a standard of LOS "C" or better for its roadway system. Consequently, LOS "A", "B", and "C" are considered acceptable, while "D", "E" and "F" are unacceptable. Within one-half mile of a state highway, LOS "D" is considered acceptable.

Placer County Improvement Standards

Roadway improvements within Placer County must conform to a set of standard plans contained in the County's *Land Development Manual* which details County standards for pavement width, lighting, drainage, sewer, and other roadside facilities. Roadway facilities associated with the proposed project must meet or exceed these standards.

Placer County Capital Improvement Program (CIP)

Placer County's Capital Improvement Program (CIP) prescribes the phasing of roadway improvements that are needed to meet the County's level of service (LOS) standards over a 20 year period. The CIP must be reviewed and updated at least once every five years or with the approval of a significant level of development. The CIP was updated in 1994 concurrent with the updates to the *Placer County General Plan.*

The improvements included in the CIP are funded through the Imposition of Fees on new development. Fees are calculated pursuant to the requirements expressed in Sections 15.28.030

and 15.28.040 of the Placer County Code. "Fees for all development projects which require building permits shall be paid prior to the issuance of building permits. Fees for new development projects, which do not require building permits, shall be paid before any other applicable county approval is made final" (Section 15.28.030C).

6.3 IMPACTS

Significance Criteria

A transportation or circulation impact would be significant if any of the following conditions, as identified in Appendix G of the CEQA Guidelines and in the Placer County policies and plans described above, would result with implementation of the proposed project:

- Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections);
- Exceed, either individually or cumulatively, the level of service standard established for Placer County — Placer County uses a LOS "C" standard for county roadways, except for those county roadways within one-half mile of a state highway and those county roadways considered exceptions in the *Auburn/Bowman Community Plan*, where LOS "D" or less is permitted. None of the roadways analyzed in this document are considered exceptions in the Community Plan;
- Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks;
- Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment);
- Result in inadequate emergency access;
- Result in inadequate parking capacity; or
- Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks).

Project Impacts

Impacts Determined to be Less than Significant

Substantial Increase in Traffic and/or Violation of Level of Service Standards. The *Transportation Impact Analysis* conducted by DKS Associates found that the proposed project will not significantly increase traffic volumes in relation to existing traffic loads and roadway capacities and that the traffic conditions at the study intersections in 2006 and in 2020 with the proposed project would meet the LOS standards established in the *Auburn/Bowman Community Plan*. The methodology and results of the analysis are presented on the following pages.

In addition to evaluating the existing traffic conditions, as documented in Section 6.1, DKS Associates' traffic analysis addresses the following development scenarios:

- 2006 No Project
- 2006 with development of DeWitt Government Center Facility Plan (2003-2010)

- 2020 No Project
- 2020 with development of DeWitt Government Center Facility Plan (2003-2010)

Future transportation system needs and impacts on the County's roadway system are based on the Placer County Travel Demand Model, which was originally developed by DKS Associates in 1993 for Placer County. This model was recently re-validated to 2001/2002 conditions in the North Auburn area.

2006 No Project Conditions

DKS Associates' analysis of the "no project" conditions under the 2006 and 2020 conditions assumed that the improvements contained in the Placer County Capital Improvement Program (CIP) would be fully implemented. These improvements include the following improvements by 2006:

- Widening of Bell Road from 2 to 4 lanes (between SR 49 and I-80),
- Extension of Willow Creek Drive from current terminus to the intersection of 1st Street and F Avenue,
- Extension of Professional Drive from its current terminus to the intersection of 1st Street and D Avenue,
- Signalization of Richardson Drive/Atwood Road intersection (concurrent with construction of the Atwood Ranch Phase III residential subdivision),
- Signalization of First Street/Bell Road Intersection,
- Extension of Richardson Drive south of Atwood Road to serve the Atwood Ranch Phase III development, and
- Locksley Lane Connector, east from Quartz at SR 49 and north to Locksley Lane.

The planned extension of Willow Creek Drive will provide a new access from SR 49 to DeWitt Center and substantially change existing travel patterns in the vicinity of DeWitt Center. This roadway alteration is not a part of the currently proposed project but is a part of County roadway planning. The planned extension of Professional Drive from its current ending south of Bell Road to the east edge of DeWitt Center, which is also not a part of the proposed project, will provide a new access point to the project area. These two roadway extensions would change the distribution of DeWitt Center traffic displayed in *Table 6.5* and have been incorporated into the future scenarios with and without the proposed project.

Under the 2006 conditions, various local development projects were assumed to be in place based on conversations with Placer County Department of Public Works staff. These projects include:

- A Home Depot store, located east of the DeWitt Center Study Area along Willow Creek Drive between Professional Drive and SR 49 (approximately 129,000 square feet).
- An Auto Zone auto parts store, located at the southwest corner of SR 49 and Willow Creek Drive (approximately 5,400 square feet).

- Sullivan Commercial located at the northwest corner of SR 49 and Willow Creek Drive, a co-branded Arco gas station and Wendy's (3,400 square feet with 12 fueling stations) and 20,000 square feet of specialty commercial shops.
- Highway 49 Racing Pigeon Clubhouse, located on the east side of SR 49 at Poppy Lane (1,344 square feet).
- Rock Creek Plaza renovation, located at southeast quadrant of SR 49 and Bell Road (43,000 square foot expansion of existing commercial center).
- The Atwood Ranch Phases II, III, and V located south of Atwood Road and totaling 229 residential units.
- A new middle school south of Atwood Road.

2006 With Project Conditions

The proposed project involves transferring employees from existing buildings to new buildings and from existing buildings to other existing buildings. Most of these movements are scheduled to take place between July 2005 and February 2006. Some transfers may occur as late as December 2007. These transfers are also expected to change existing travel patterns in the project vicinity.

For 2006 conditions, the proposed project includes minimal new employment in DeWitt Center. Approximately 15 new employees would be located at the new facilities. Thirteen currently occupied multi-family dwelling units (Bell Gardens Apartments) would be demolished in Phase A of the proposed project and up to ten new multi-family dwelling units would be constructed as part of the new WC in Phase D of the proposed project.

2020 No Project Conditions

Future improvements contained in the Placer County CIP to be constructed by 2020 include the following:

- Widening of SR 49 to six lanes from Dry Creek to Nevada Street,
- Extension of Richardson Drive from Bell Road north to Dry Creek Road,
- Extension of Education Street west to Richardson Drive,
- Extension of Quartz Drive west to Richardson Drive, and
- Improvement of Bell Road to four-lane divided arterial standards from SR 49 to Richardson Drive.

The existing facilities at DeWitt Center are outdated and overcrowded. Therefore, employment levels at DeWitt Center are assumed to remain constant in the no project conditions as there is limited room for growth without implementation of the proposed construction.

2020 With Project Conditions

The proposed project will accommodate approximately 180 new employees at DeWitt Center by 2010. As recognized in the *Transportation Impact Analysis*, Placer County is currently implementing plans for the construction of a South Placer Justice Center (SPJC). That facility is

expected to be constructed in phases, with some construction completed in 2005 and additional construction phases completed in 2007. This facility will accommodate the transfer of 249 employees from DeWitt Center to the South Placer County Justice Center in 2007, resulting in a net *decrease* of 69 employees at DeWitt Center. The *Transportation Impact Analysis* was based on preliminary staffing projections that called for a transfer of 205 employees, resulting in a net decrease of 25 employees. Therefore 2020 With Project Conditions as evaluated in this EIR are slightly worse than actually anticipated.

Table 6.6 summarizes the estimated trip generation at DeWitt Center under existing conditions (year 2002 data) and the With Project conditions for 2006 and 2020.

Table 6.6
Estimated Growth in Vehicle Trips Generated by DeWitt Center

		2002	***2006***	***2020***
Employment		1,917	1,932	1,892 [1]
Daily Vehicle Trips		16,809	16,940	16,590
AM Peak Hour Vehicle Trips	Inbound	1,251	1,261	1,235
	Outbound	366	369	364
PM Peak Hour Vehicle Trips	Inbound	399	402	397
	Outbound	1,018	1,026	1,013

Note 1: Reflects 205 employees moved to South Placer County Justice Center (SPJC) in Roseville by 2010
Source: DKS Associates 2003

2006 Traffic Impact Analysis

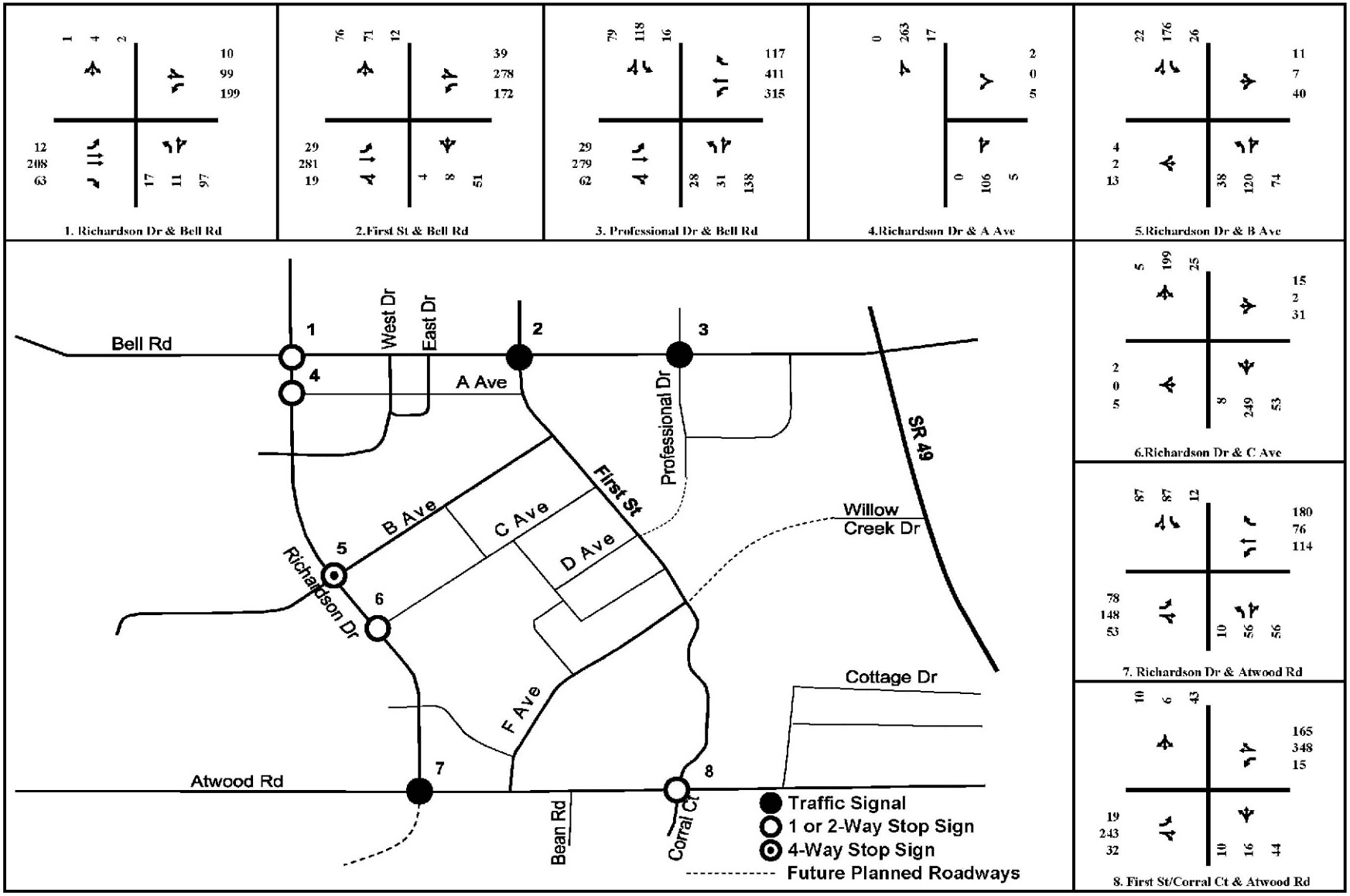
No Project

Figure 6-4 shows the 2006 No Project AM peak hour volumes at the study intersections and *Figure 6-5* shows the 2006 No Project PM peak hour volumes. DKS Associates conducted a planning level traffic signal warrant analysis under 2006 No Project conditions. Results of this analysis suggest that traffic signals would likely be warranted at the intersections of First Street at Bell Road and Richardson Drive at Atwood Road by 2006 without the proposed project.

With Project

As stated previously, the DeWitt Government Center Facility Plan does not include significant increases in employment by 2006. It is assumed that the new buildings will house employees that currently are located in other buildings throughout DeWitt Center. Buildings that are left vacant by the transfers of employees included in the proposed project would be demolished. Therefore, compared to the No Project condition, few new vehicle trips would be produced by the proposed project in 2006.

Employees and visitors to the proposed new buildings will use different parking facilities than they would under the No Project condition. The change in location of employment and parking resulting from these proposed projects would cause moderate shifts in traffic around the area. The new buildings are all located toward the west side of the developed area within DeWitt Center and thus would cause shifts of traffic from the eastern entrances and roadways in



north fork associates

Not To Scale

N W E S

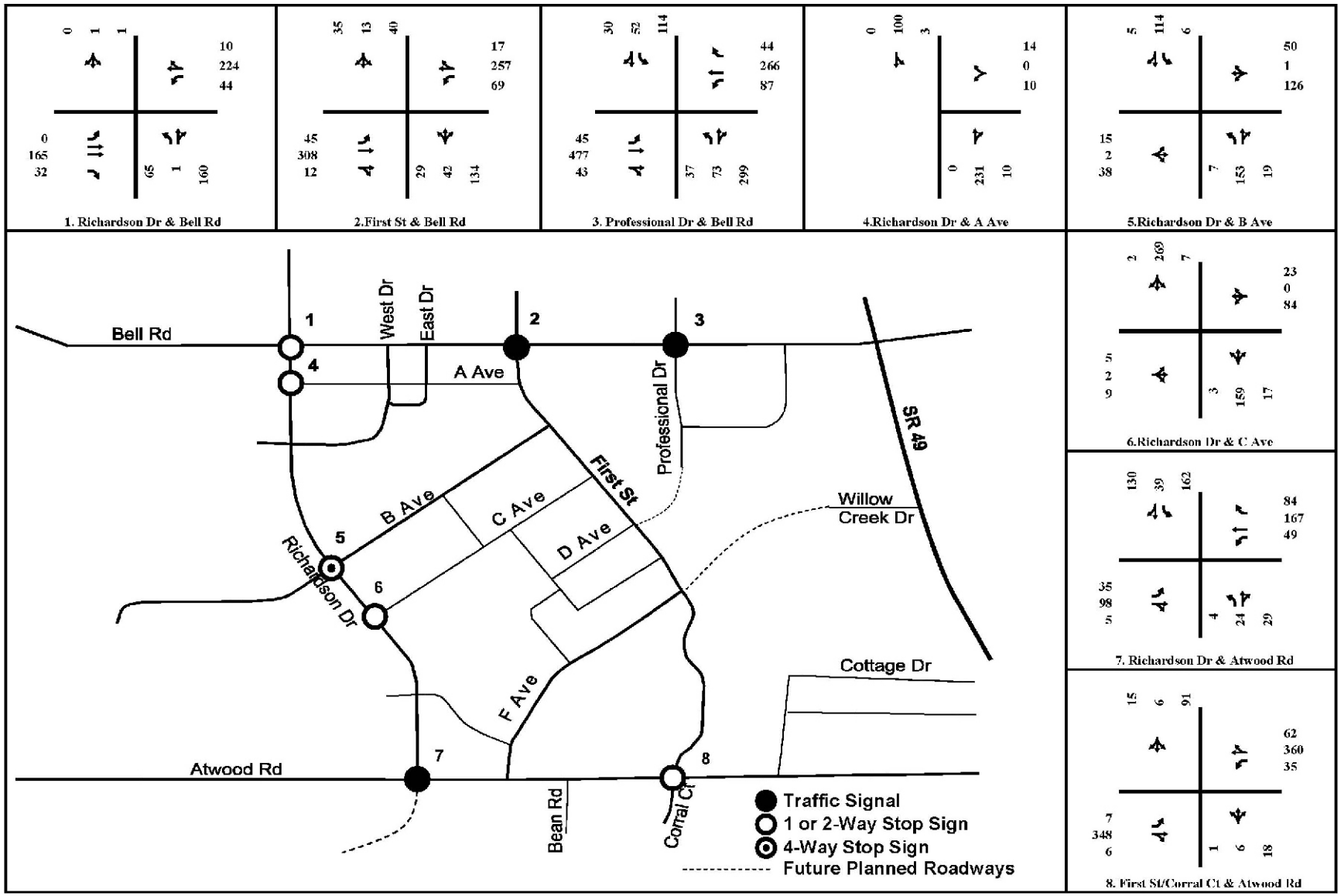
Source: DKS Associates

Figure 6-4

2006 NO PROJECT AM PEAK HOUR

DeWitt Government Center Facility Plan (2003 - 2010)

Placer County, California



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Source: DKS Associates

Figure 6-5

2006 NO PROJECT PM PEAK HOUR

DeWitt Government Center Facility Plan (2003 - 2010)

Placer County, California

DeWitt Center toward the west. An updated and more detailed version of the Placer County Travel Demand Model was used to determine the resultant shifts of traffic at the study intersections. *Figure 6-6* shows the estimated shifts in turning movements attributed to the proposed project for the AM peak hour and *Figure 6-7* shows the estimated shifts for the PM peak hour. The updated Travel Demand Model also includes the Willow Creek and Professional Drive extensions. The addition of these two extensions results in shifts of vehicles from Atwood and Bell to Willow Creek and from First to Professional. Since these two extensions are assumed to be in the no project and with project cases, their impacts on traffic volumes are not documented in the Traffic Impact Analysis report prepared by DKS Associates.

Figure 6-8 shows the 2006 Plus Project AM peak hour volumes, and *Figure 6-9* shows the same data for the PM peak hour. A planning level traffic signal warrant analysis was conducted for 2006 Plus Project conditions. Results of this analysis suggest that no additional signals would be warranted in the Plus Project conditions beyond those needed under the No Project conditions (at the intersections of First Street at Bell Road and Richardson Drive at Atwood Road).

Table 6.7 shows the level of service summaries for 2006 conditions for the AM and PM peak hours. These tables show that all study intersections would operate at acceptable (LOS A through C) conditions with or without the proposed project. Compared to the No Project conditions, the new facilities of the proposed project would shift moderate amounts of traffic from one intersection to another, but they would not add significant overall traffic to the roadway system near DeWitt Center.

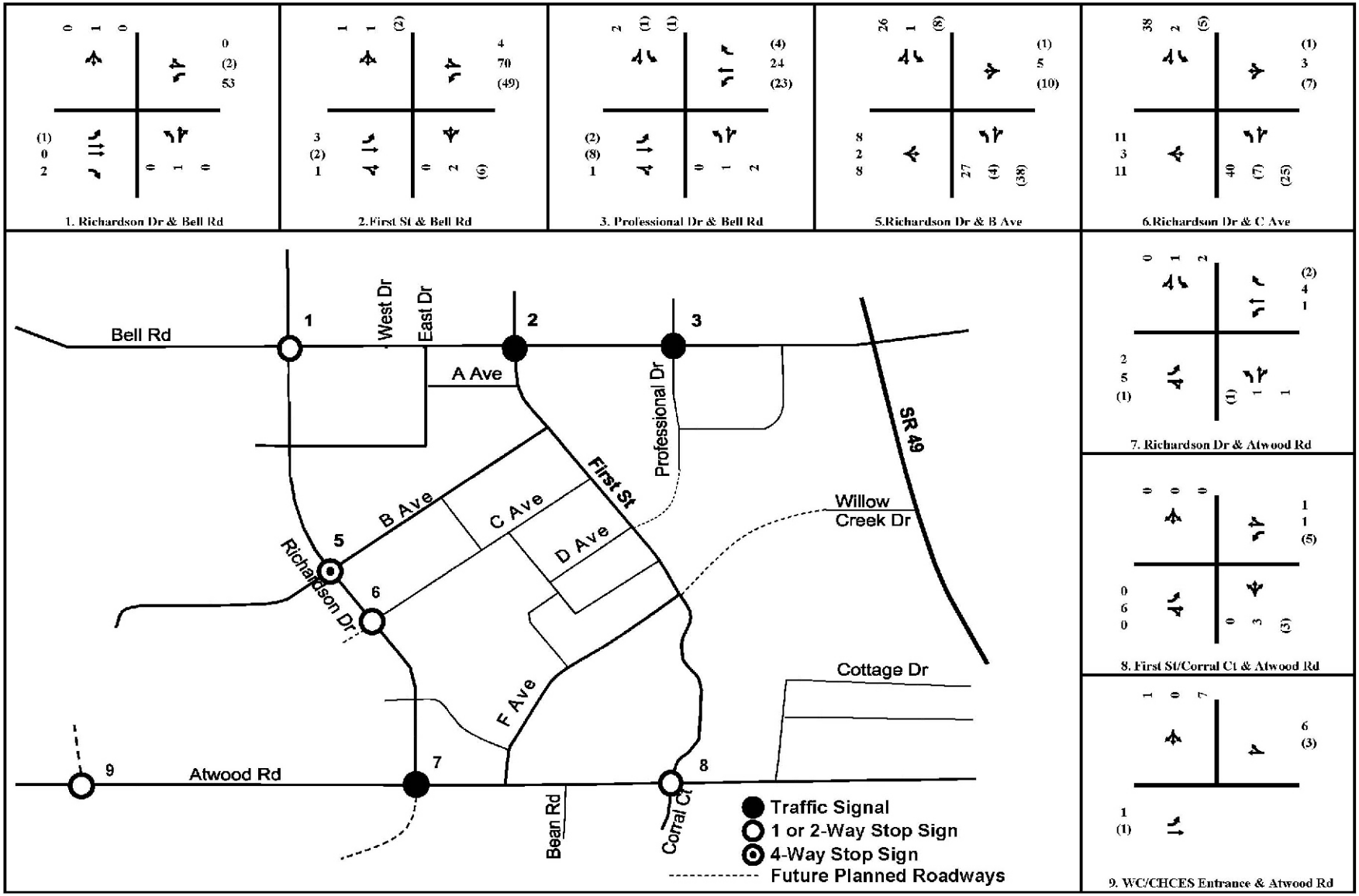
2020 Traffic Impact Analysis

No Project

A traffic impact analysis was conducted for the year 2020 in the project vicinity. Estimated 2020 development levels in the North Auburn area and the rest of the region were assumed based on previous regional studies. In addition, checks were made to ensure that key local developments were included in the 2020 development assumptions. The Placer County Travel Demand Model was then used to estimate roadway volumes on the study area roadways and intersections. *Figure 6-10* shows the 2020 No Project AM peak hour volumes at the study intersections, and *Figure 6-11* shows the 2020 No Project PM peak hour volumes.

With Project

The proposed DeWitt Government Center Facility Plan includes increases in employment in the new facilities over the facilities they replace. These increases in employment are anticipated to occur by 2010. Countering these increases, however, are shifts of employees from DeWitt Center facilities to the proposed South Placer Justice Center by 2007. The approximately 180 new employees anticipated by 2010 combined with the 249 employees to be transferred to the SPJC by 2007 result in a decrease of 69 employees by 2020 and a related decrease in daily traffic trips to and from DeWitt Center. As stated above, the *Transportation Impact Analysis* was based on preliminary staffing projections that called for transfer of 205 employees to the South Placer Justice Center, corresponding to a decrease of 25 employees. Thus this analysis indicates conditions that are slightly worse than is actually anticipated.



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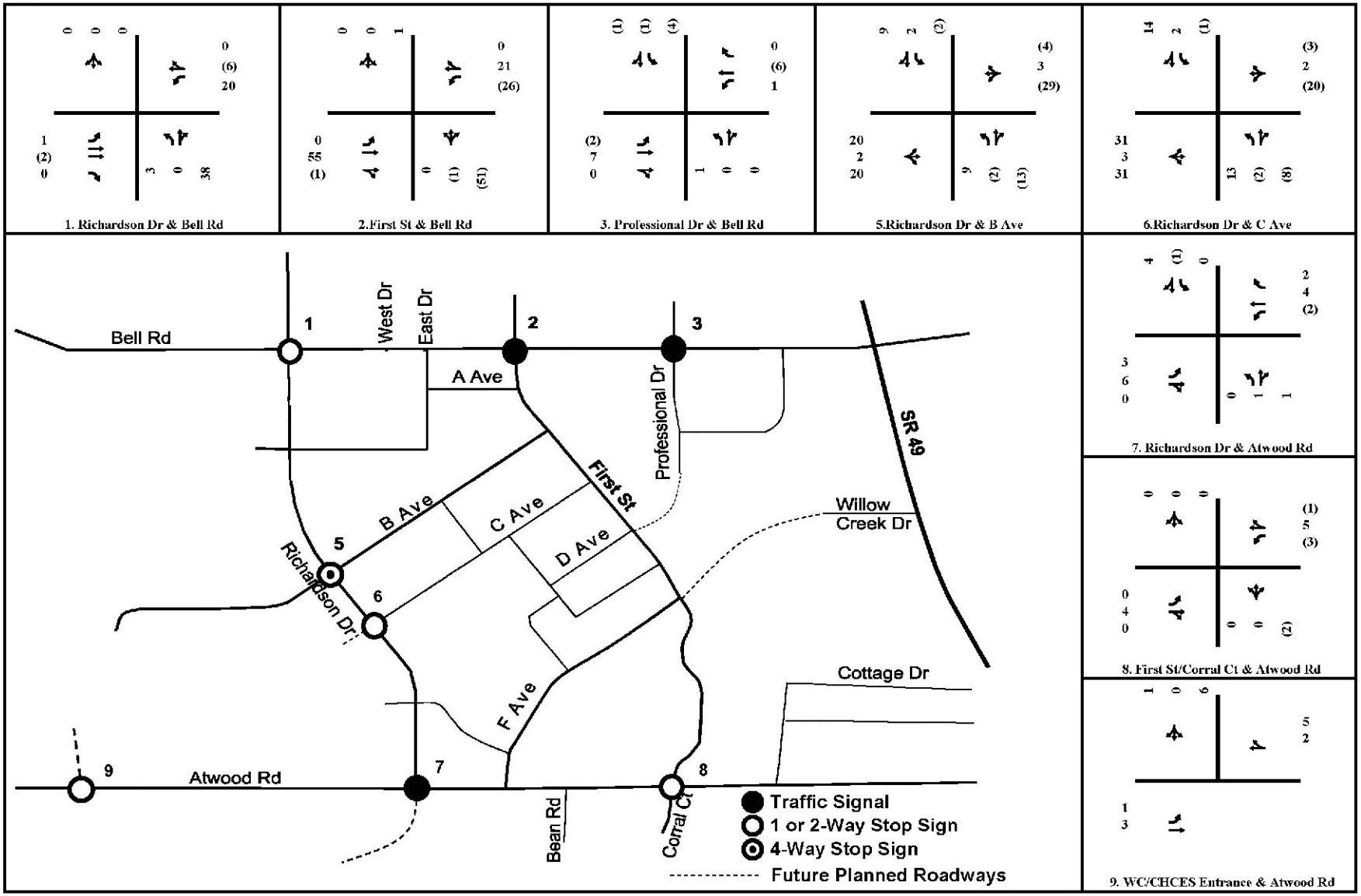
Source: DKS Associates

Figure 6-6

2006 TURNING MOVEMENT SHIFTS AM PEAK HOUR

DeWitt Government Center
Facility Plan (2003 - 2010)
Placer County, California



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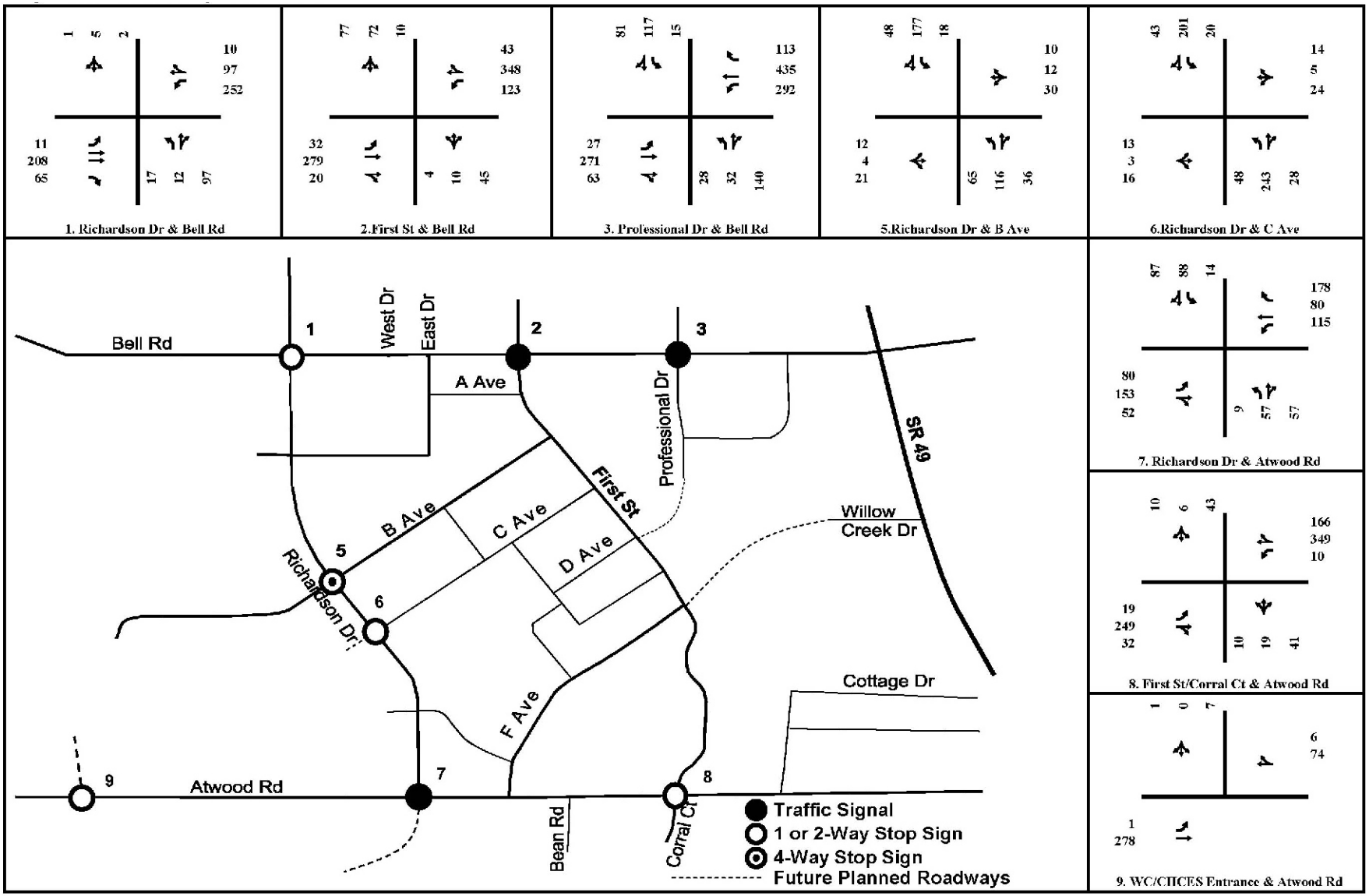
Source: DKS Associates

Figure 6-7

2006 TURNING MOVEMENT SHIFTS PM PEAK HOUR

DeWitt Government Center
Facility Plan (2003 - 2010)
Placer County, California



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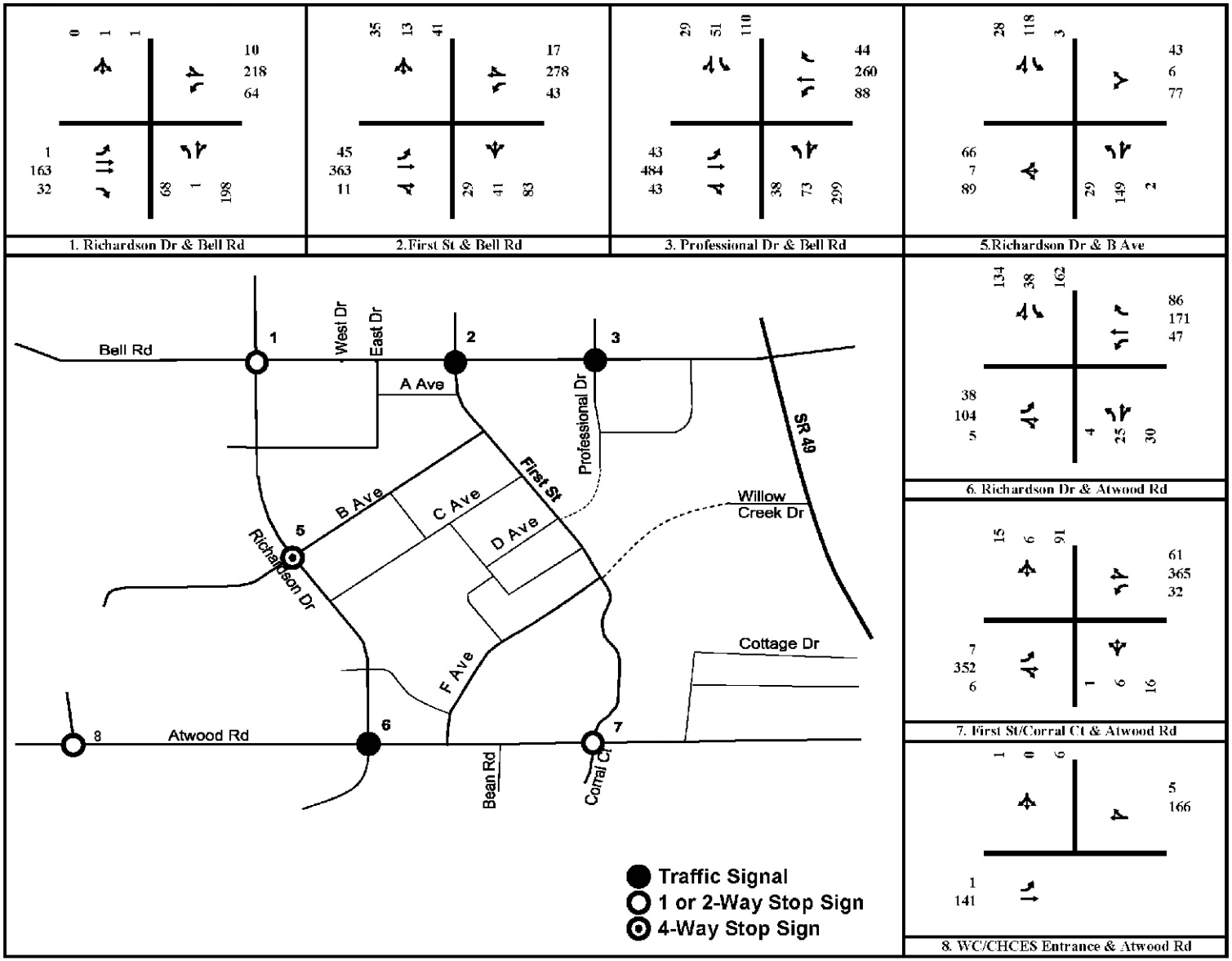
Source: DKS Associates

Figure 6-8

2006 CHANGES IN TRAFFIC VOLUMES AM PEAK HOUR

DeWitt Government Center
Facility Plan (2003 - 2010)
Placer County, California



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Source: DKS Associates

Figure 6-9

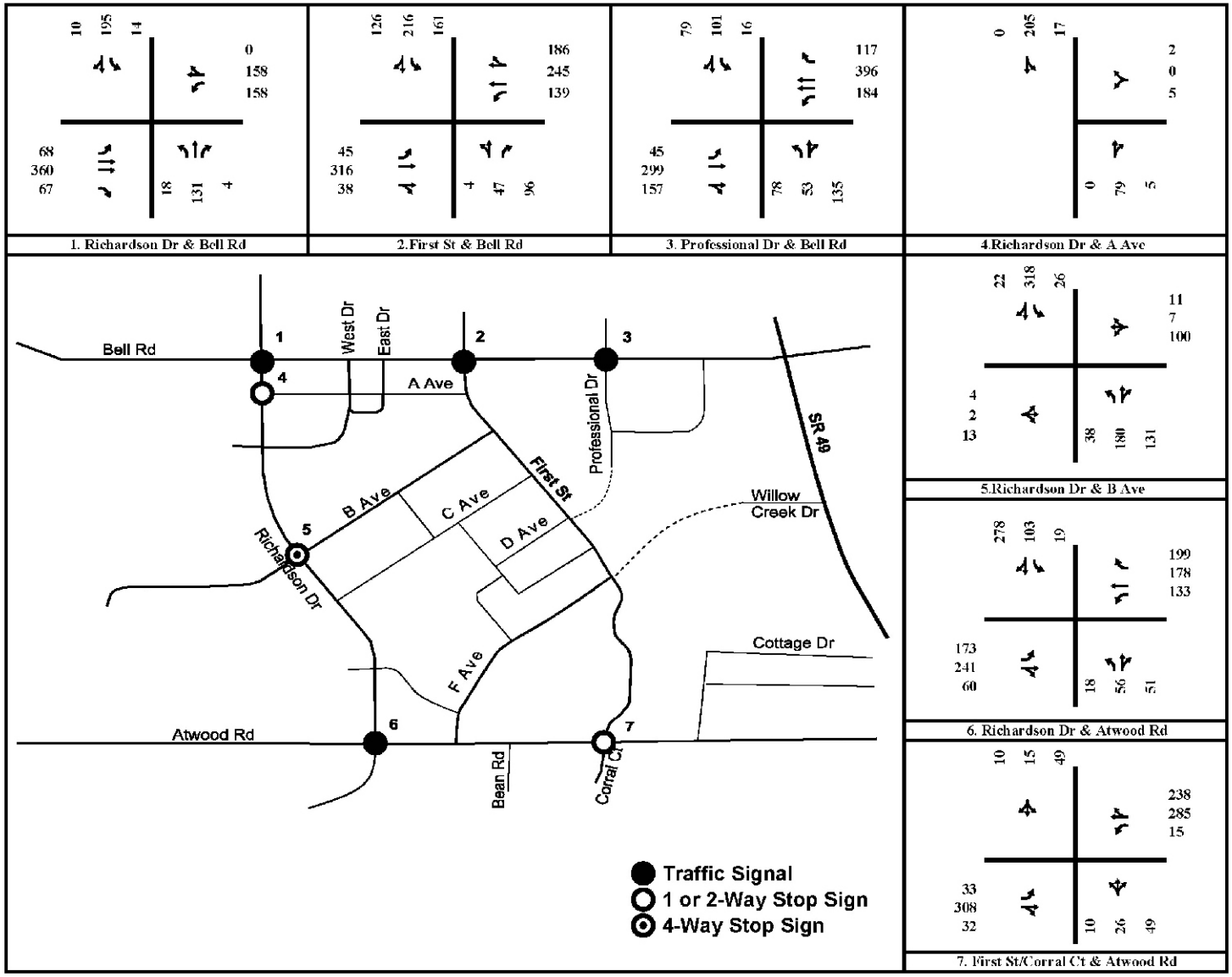
2006 CHANGES IN TRAFFIC VOLUMES PM PEAK HOUR

DeWitt Government Center
Facility Plan (2003 - 2010)
Placer County, California

Table 6.7
2006 Levels of Service - With Project

Intersection	Traffic Control	No Project AM				Plus Project AM				No Project PM				Plus Project PM			
		Average		Worst Movement		Average		Worst Movement		Average		Worst Movement		Average		Worst Movement	
		LOS	Delay/ V/C	LOS	Delay	LOS	Delay /V/C	LOS	Delay	LOS	Delay /V/C	LOS	Delay	LOS	Delay/ V/C	LOS	Delay
1: Richardson Dr at Bell Rd	2-way stop	A	3.9	C	16.8	A	4.4	C	19.6	A	3.0	B	12.9	A	3.5	B	13.6
2: First St at Bell Rd	Signal [1]	A	0.41			A	0.47			A	0.45			A	0.42		
3: Professional Dr at Bell Rd	Signal	A	0.52			A	0.50			B	0.61			B	0.61		
4: Richardson Dr at A Ave	1-way stop	A	2.8	B	10.4	N/A	N/A	N/A	N/A	A	1.5	B	10.0	N/A	N/A	N/A	N/A
5: Richardson Dr at B Ave	4-way stop	A	8.8			A	8.9			A	9.0			A	8.9		
6: Richardson Dr at C Ave	2-way stop	A	1.2	B	12.8	A	1.4	B	13.8	A	2.7	13.1	B	A	2.2	B	12.2
7: Richardson Dr at Atwood Rd	Signal [1]	A	0.36			A	0.37			A	0.30			A	0.31		
8: First St at Atwood Rd	2-way stop	A	1.5	C	19.3	A	1.5	C	19.3	A	2.1	C	24.6	A	2.0	C	24.6
9: CES and WC Entrance at Atwood Road [3]	1-Way Stop	N/A	N/A	N/A	N/A	A	0.2	B	10.4	N/A	N/A	N/A	N/A	A	0.2	B	10.1

Note: 1 New traffic signals included in Placer County CIP
2 Intersection abandoned under Plus Project conditions
3 New intersection part of Proposed Project
Source: DKS Associates 2003



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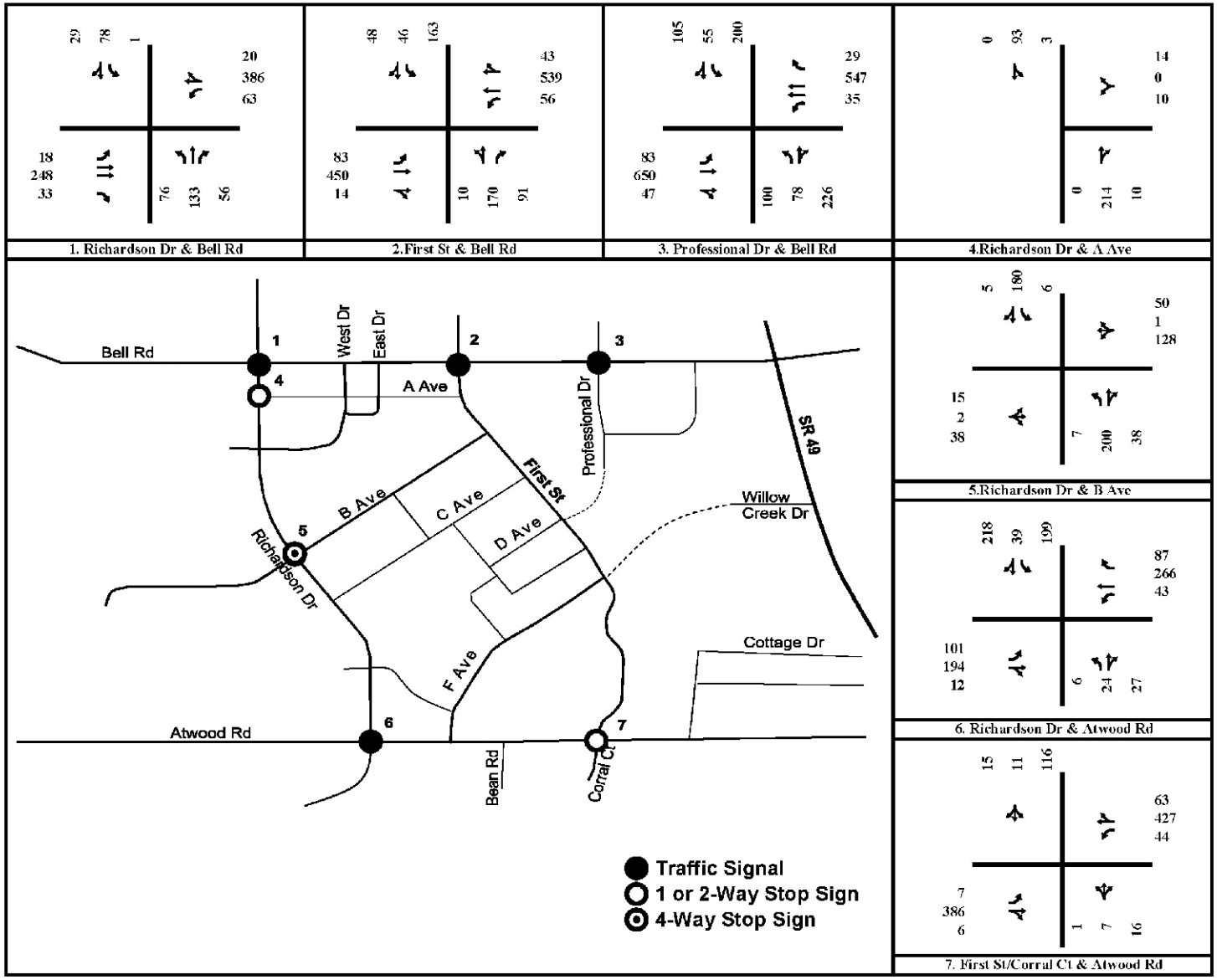
Source: DKS Associates

Figure 6-10

2020 NO PROJECT AM PEAK HOUR

DeWitt Government Center Facility Plan (2003 - 2010)

Placer County, California



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Source: DKS Associates

Figure 6-11

2020 NO PROJECT PM PEAK HOUR

DeWitt Government Center Facility Plan (2003 - 2010)

Placer County, California

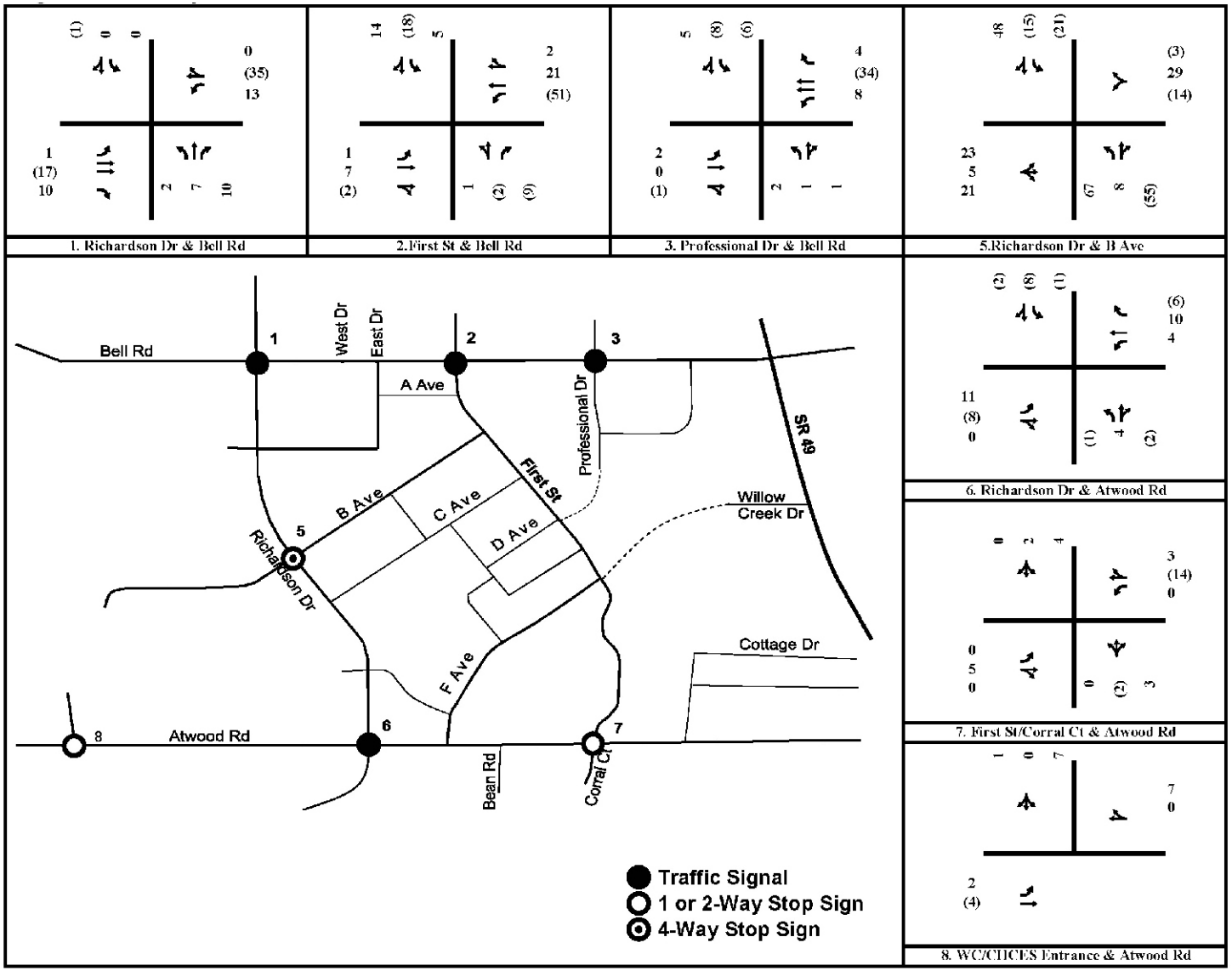
As in the 2006 conditions, the proposed project will cause moderate shifts in traffic around the project area resulting from the new locations of employment centers and parking lots. *Figure 6-12* shows the approximate shifts in turning movements attributed to the proposed project for the AM peak hour in the 2020 scenario, and *Figure 6-13* shows the turning movement shifts in the PM peak hour.

Figure 6-14 shows the 2020 Plus Project AM peak hour volumes, and *Figure 6-15* shows 2020 Plus Project PM peak hour volumes. A planning level traffic signal warrant analysis was conducted for all 2020 conditions. Results of this warrant analysis suggest that no additional signals would be warranted beyond those needed under the No Project condition/2006 scenario (at the intersections of First Street at Bell Road and Richardson Drive at Atwood Road). The Placer County CIP includes new signals at these intersections by 2020.

Table 6.8 shows the level of service summaries for 2020 conditions for the AM and PM peak hours. The tables show that all study intersections would operate at acceptable conditions (LOS A through C) with or without the proposed project. Compared to the No Project condition, the proposed project would shift moderate amounts of traffic from one intersection to another, but the proposed changes in conditions in the DeWitt Center Study Area would not add significant overall traffic to the roadway system near DeWitt Center.

One stop sign controlled intersection (First Street at Atwood Road) would operate at an overall intersection LOS "A" in the PM peak hour both with and without the proposed project. The LOS analysis also shows that the southbound approach would operate at LOS "E" with and without the proposed project. This means that while the overall intersection operates at an acceptable level of service, the relatively low volumes on the north and south approaches would experience longer delays. The County's LOS policy applies to overall intersection delay, not the delay of each approach, therefore signalization of this intersection is not warranted under 2020 conditions with or without the proposed project.

Another stop sign controlled intersection (Richardson Drive at C Avenue) would operate at an overall intersection LOS "A" in the AM peak hour both with and without the proposed project. The LOS analysis also shows that the westbound approach would operate at LOS "D" without proposed project and LOS "F" with the proposed project. This means that while the overall intersection operates at an acceptable level of service, the relatively low volumes on the westbound approach would experience longer delays with the proposed project than without it. The County's LOS policy applies to overall intersection delay, not the delay of each approach, therefore signalization of this intersection is not warranted under 2020 conditions with or without the proposed project.



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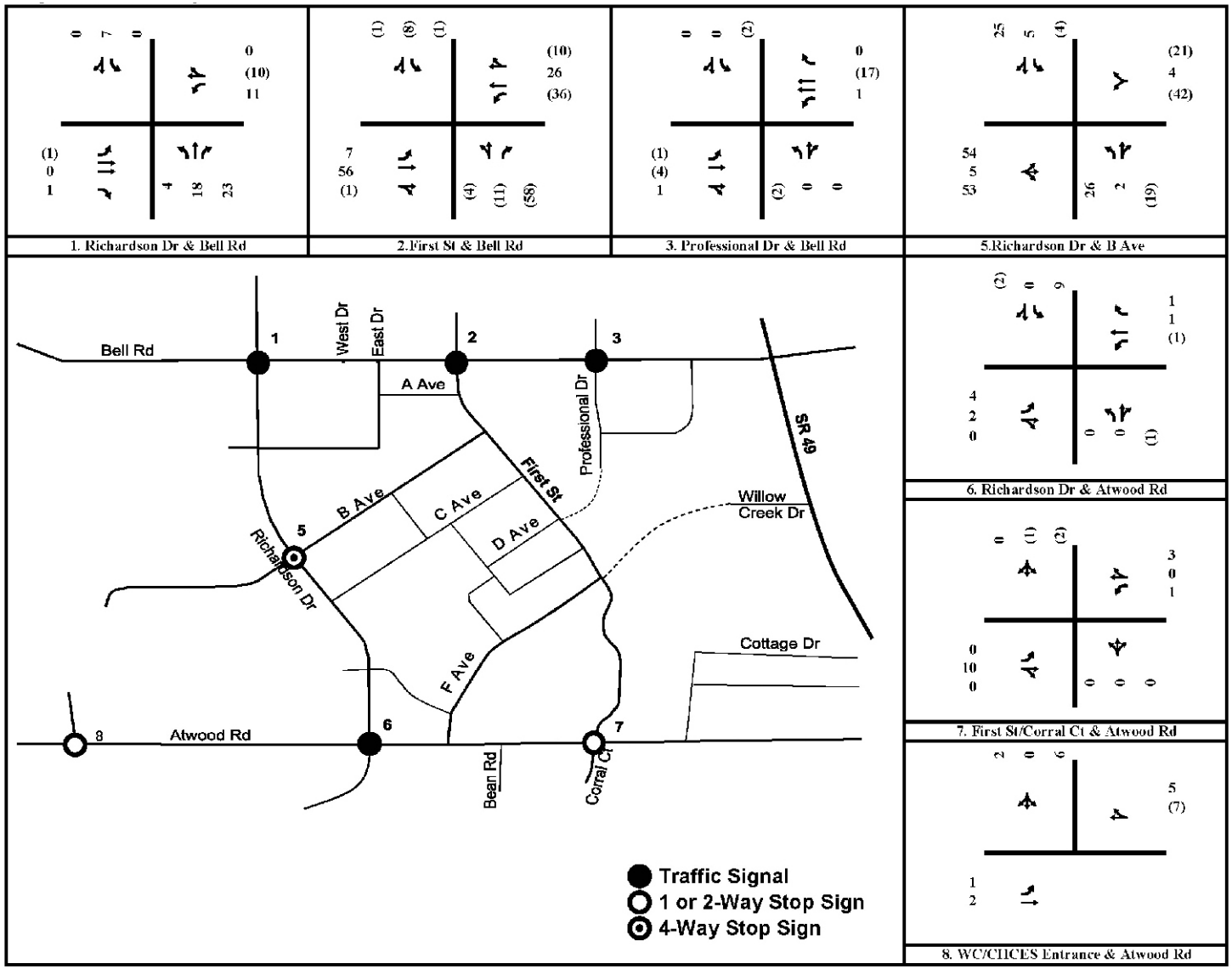
Source: DKS Associates

Figure 6-12

2020 TURNING MOVEMENT SHIFTS AM PEAK HOUR

DeWitt Government Center Facility Plan (2003 - 2010)

Placer County, California



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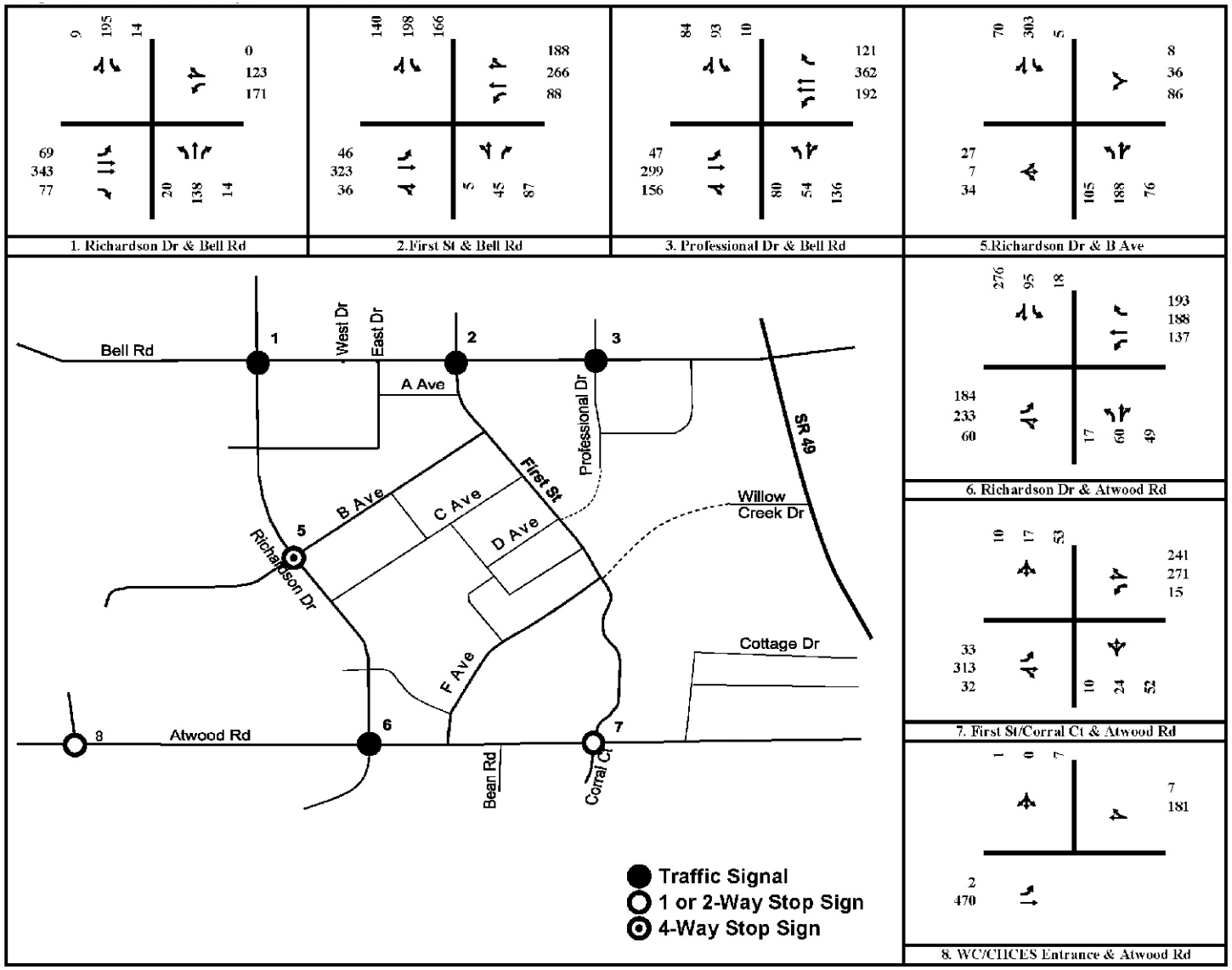
Source: DKS Associates

Figure 6-13

2020 TURNING MOVEMENT SHIFTS PM PEAK HOUR

DeWitt Government Center Facility Plan (2003 - 2010)

Placer County, California



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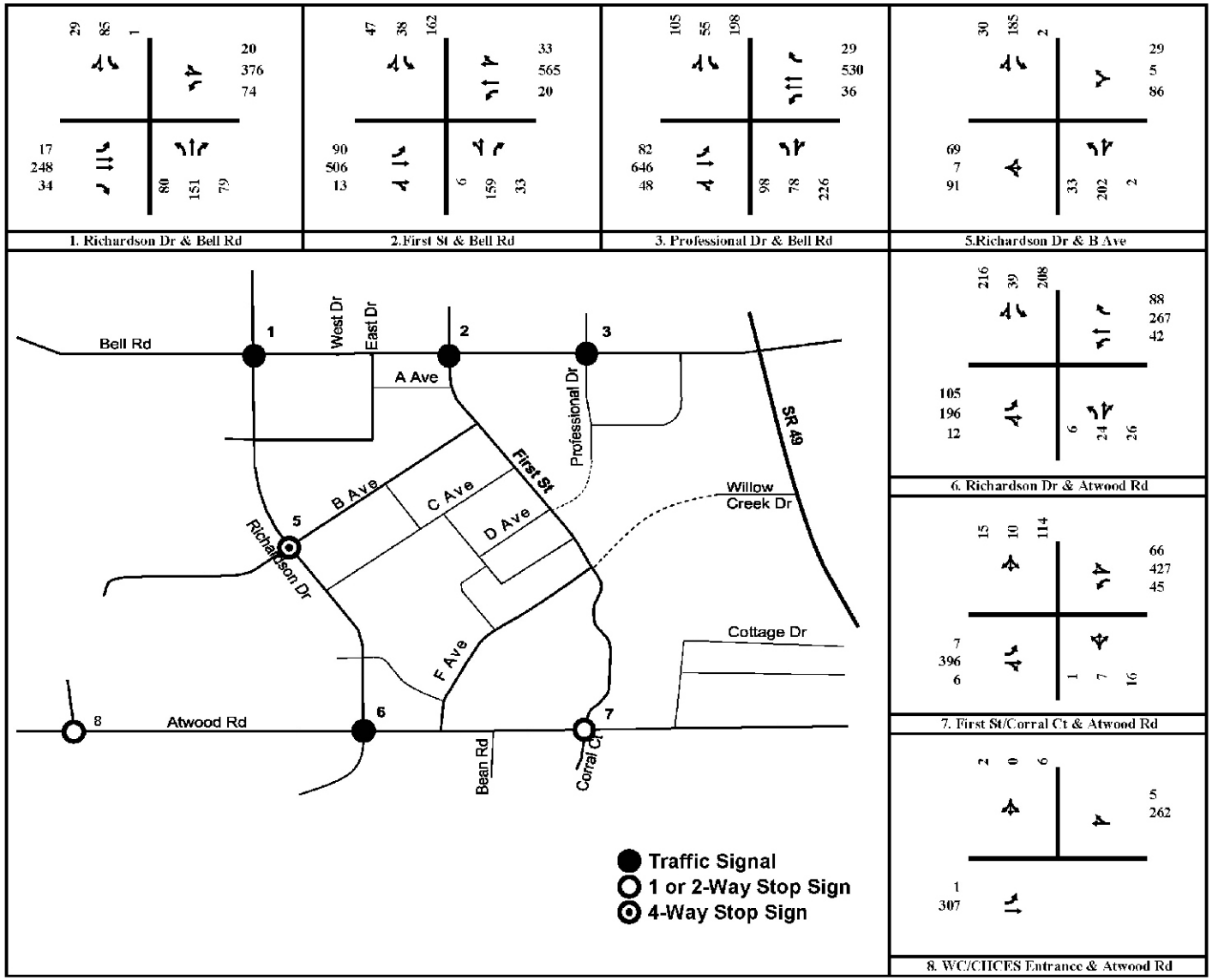
Source: DKS Associates

Figure 6-14

2020 CHANGES IN TRAFFIC VOLUMES AM PEAK HOUR

DeWitt Government Center
Facility Plan (2003 - 2010)
Placer County, California



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Source: DKS Associates

Figure 6-15

2020 CHANGES IN TRAFFIC VOLUMES PM PEAK HOUR

DeWitt Government Center
Facility Plan (2003 - 2010)
Placer County, California

Table 6.8
2020 Levels of Service - With Project

Intersection	Traffic Control	No Project AM				Plus Project AM				No Project PM				Plus Project PM			
		Average		Worst Movement		Average		Worst Movement		Average		Worst Movement		Average		Worst Movement	
		LOS	Delay/ V/C	LOS	Delay	LOS	Delay/ V/C	LOS	Delay	LOS	Delay/ V/C	LOS	Delay	LOS	Delay/ V/C	LOS	Delay
1: Richardson Dr at Bell Rd	Signal [1]	A	0.41			A	0.41			A	0.44			A	0.44		
2: First St at Bell Rd	Signal [1]	A	0.55			A	0.51			A	0.52			A	0.52		
3: Professional Dr at Bell Rd	Signal	A	0.48			A	0.49			B	0.645			B	0.64		
4: Richardson Dr at A Ave[2]	1-way stop	A	2.9	A	9.9	N/A	N/A	N/A	N/A	A	1.5	A	9.9	N/A	N/A	N/A	N/A
5: Richardson Dr at B Ave	4-way stop	B	11.4			B	12.1			A	10.0			A	9.9		
6: Richardson Dr at C Ave	2-way stop	A	2.8	D	26.2	A	4.9	F	56.1	A	2.6	C	15.2	A	3.3	C	16.5
7: Richardson Dr at Atwood Rd	Signal [1]	B	0.61			A	0.60			A	0.46			A	0.46		
8: First St at Atwood Rd	2-way stop	A	2.1	C	23.8	A	2.2	C	24.1	A	3.4	E	40.4	A	3.4	E	41.0
9: CES and WC Entrance at Atwood Road [3]	1-Way Stop	N/A	N/A	N/A	N/A	A	0.1	B	13.0	N/A	N/A	N/A	N/A	A	0.1	B	11.8

Note: 1 New traffic signals included in Placer County CIP
2 Intersection abandoned under Plus Project conditions
3 New intersection part of Proposed Project
Source: DKS Associates 2003

Result in a Change in Air Traffic Patterns Resulting in Substantial Safety Risks. DeWitt Center is located within the Foothill Airport Land Use Plan (FALUP). The project area is located approximately 1.25 miles from the Auburn Municipal Airport. The FALUP designates the majority of the project area in Airport Compatibility Zone D, where the only land use restrictions with respect to air traffic are structure height and use of reflective materials. **FALUP Policy 4.3.2 *Height Restrictions* indicates that structure heights of more than 150 feet may be incompatible in *Compatibility Zone D*. The actual allowable height must be determined by the Federal Aviation Administration (FAA). The proposed communications tower is 160 feet tall. The Department of Facility Services will complete the necessary FAA forms to obtain a formal FAA determination of the allowable height** ~~The proposed construction does not meet or exceed the maximum height limits~~, as discussed in **CHAPTER 4, LAND USE**.~~,~~

The Department of Facility Services will also complete the ALUC Application for Major Land Use Action Review to obtain a formal determination of the project's consistency with the FALUP. ~~nor does it include the use of reflective materials that could affect air traffic patterns.~~

Inadequate Emergency Access. All new and/or redesigned road encroachments and access ways would be designed per Placer County standards to meet emergency access requirements. The proposed project does not include any significant road realignments that would have an adverse affect on emergency access throughout DeWitt Center. Based on employment projections developed by the Placer County Department of Facility Services, the project would not significantly increase employment or visitors to the project area. Therefore it would not significantly increase demand for emergency services and the existing access would be sufficient to serve the existing and proposed uses at DeWitt Center.

A new encroachment on Atwood Road is proposed to provide access to the Children's Emergency Shelter and Women's Center projects (CES and WC). Due to the topography along Atwood Road, it is possible that sight distance at the location of the new encroachment may create safety hazards. However, the roadway would be designed to meet all emergency access requirements. The safety hazards associated with this proposed roadway are discussed in Impact 6.1.

***Inadequate Parking Capacity*.** The proposed project includes adequate parking facilities which would sufficiently support the number of employees and visitors to the proposed Land Development Building (LDB) and Auburn Justice Center (AJC). The Placer County Zoning Ordinance, Section 10.052 requires one parking space for every 300 square feet of office building space. The proposed parking for the LDB includes 200 parking spaces in the first phase of development and 200 additional spaces within one year of completion of the building. This provides 83 spaces more than the 317 required for the ±95,000 square foot building. It is anticipated that the proposed LDB would not operate at its maximum capacity within the first few years of occupation, therefore, the provision of 200 parking spaces (or one for every 475 square feet of office building space) would be sufficient to meet parking demand in the first year. The proposed parking for the AJC includes 429 spaces, including secure parking areas for Sheriff's Office special equipment and vehicles. Of these, 121 are available for public/visitor parking. The proposed AJC consists of a ±67,300 square foot office building and ±28,000 square foot Ancillary Building. Using the parking standard for office buildings for the main building

and for warehousing (one space for every 1,500 square feet) for the Ancillary Building, the AJC requires 244 parking spaces. Parking considerations for the CES and WC will be evaluated in subsequent project-level review of those projects.

Conflicts with Adopted Policies, Plans, or Programs Supporting Alternative Transportation. Currently, Placer County Transit (PCT) provides hourly bus service to DeWitt Center on two routes, one of which provides connections to other PCT bus routes in the City of Auburn. By 2020, employment at DeWitt Center is expected to grow by only about 10 percent, and thus will likely not require additional bus service to DeWitt Center. Since the LDB, AJC, CES, and WC would not significantly increase employment or visitors to DeWitt Center, they would not significantly increase the demand for transit services or bicycle facilities in the project area, and thus would not have a significant impact on transit.

Bicycle facilities in the project vicinity are very limited. As stated above, Bell Road and Atwood Road are classified as "on-street bikeways." There are no signed or striped bike lanes on these roads. The proposed project includes widening of the southern side of Bell Road adjacent to the Land Development Building site and provision of curb, gutter, and sidewalk. The project also includes widening of the western side of Richardson Drive adjacent to the Auburn Justice Center site and provision of curb, gutter, and sidewalk. In compliance with the *Auburn/Bowman Community Plan* Parks and Recreation Section, the project also includes provision of sections of Class 1 trails along each construction site's frontage on Bell Road, Richardson Drive, and Atwood Road. The proposed trail segments are shown in *Figure 2-10* in **CHAPTER 2, PROJECT DESCRIPTION**. These actions will increase bicycle safety within the immediate vicinity of the project area. DKS Associates found that since the proposed project would not significantly increase employment or visitors to DeWitt Center, it would not significantly increase demand for bicycle facilities.

The Placer County Zoning Ordinance requires that parking lots with 20 or more spaces provide one bicycle rack for every 20 required parking spaces. Bicycle racks need to hold a minimum of four bikes. However, this policy translates to a requirement for 15 bicycle parking racks at the LDB (311 parking spaces are required, 311 divided by 20 is 15). This would provide parking for 60 bicycles. Very few of the existing employees in and visitors to the Land Development departments use bicycles to commute or visit DeWitt Center. Therefore, the proposed project includes provision of three bicycle parking racks, accommodating 12 bicycles total, at the LDB. The County would provide additional parking racks when and if demand for them occurs. Similarly, the bicycle parking required by the zoning ordinance for the AJC is excessive in relation to the use of the proposed facility. Vehicle parking at the AJC is required to be a minimum of 244 spaces, which would translate to a requirement for 11 bicycle parking racks, accommodating parking for 44 bicycles. Instead, the Department of Facility Services proposes to provide one bicycle parking space for every 15 public vehicle parking spaces (excluding secure parking spaces designated for staff use). As 121 public parking spaces are provided, the Department of Facility Services proposes to provide bicycle parking racks that will accommodate a total of eight bicycles at the AJC. Again, the County would provide additional bicycle parking as demanded by actual use of the building.

Potentially Significant Impacts

Impact 6.1 – Substantially Increase Hazards Due To Design Feature Or Incompatible Uses

Significance Before Mitigation:	Significant
Mitigation:	6.1a
Significance After Mitigation:	Less than Significant

DKS Associates' review of the changes in circulation near the proposed LDB and AJC indicates that the projects are not expected to create any significant impacts on localized vehicle circulation and safety. The proposed design of entrances to parking areas for these buildings would consolidate access points at appropriate locations (DKS 2003).

The proposed CES and WC driveway onto Atwood Road is located approximately one-half mile west of Richardson Drive. Atwood Road in this area has a couple of small hills which limit the "sight distance" along the roadway. In the vicinity of the proposed driveway, Atwood Road has a 45 miles per hour (mph) design speed and the centerline is marked with a double-yellow line to indicate a no passing zone.

As stated in the *Transportation Impact Analysis*, at a minimum, the sight distance at this driveway should allow approaching vehicles time to safely stop when a vehicle exits the driveway. According to Table 201.1 in the Caltrans Highway Design Manual, a 45 mph design speed requires a minimum stopping sight distance of 360 feet. Ideally, sight distances would also allow vehicles to exit the driveway onto Atwood Road without requiring approaching vehicles to significantly reduce their speed. Much greater distances are required to meet that criterion.

DKS Associates performed sight distance measurements at this location in accordance with Caltrans design criteria. DKS found that the clear sight distance for vehicles exiting the proposed driveway would be about 360 feet to the east and approximately 285 feet to the west. Therefore, vehicles exiting the driveway looking east on Atwood Road could see an approaching vehicle about 360 feet away, or looking west see an approaching vehicle about 285 feet away. Beyond these distances, Atwood Road has hills that limit sight distance. The sight distance to the east of the proposed driveway would meet the minimum standard, while the sight distance to the west would be 75 feet below the minimum. The lack of a safe sight distance at the proposed location for the driveway to the CES and WC represents a significant impact. *Mitigation Measure 6.1a* requires either reconstruction of Atwood Road in the vicinity of the proposed driveway to provide adequate sight distance in accordance with Placer County design standards to the satisfaction of the Placer County Public Works Department, or relocation of the future driveway to a location that meets minimum sight distance requirements.

6.4 MITIGATION MEASURES

Substantially Increase Hazards Due To Design Feature Or Incompatible Uses

Mitigation Measure 6.1a: To ensure adequate sight distance exists for vehicles exiting the Children's Emergency Shelter and Women's Center sites via the proposed driveway accessing Atwood Road, the Department of Facility Services shall either reconstruct Atwood Road in the vicinity of the proposed driveway or relocate the driveway to a location meeting minimum sight distance requirements.

Compliance with this mitigation measure will be assessed during subsequent project-level environmental review of the proposed CES and WC facilities.

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CHAPTER 7

AIR QUALITY

CHAPTER 7 AIR QUALITY

This section addresses project impacts on ambient air quality and the exposure of people to unhealthful pollutant concentrations by analyzing the type and quantity of emissions that would be generated by the development of the proposed project. Air pollutant emission estimates were prepared through the use of the URBEMIS 2001 program developed for the California Air Resources Board. The resulting technical support materials are provided in Appendix C.

7.1 SETTING

DeWitt Center is located in central Placer County, which lies within the Sacramento Valley Air Basin. Air quality in the project vicinity is influenced by both local and distant emission sources. Local sources include the emissions from vehicle traffic on nearby roadways (Atwood Road, Bell Road, State Route 49, and internal project area roads), area sources such as landscaping maintenance, and stationary sources such as residential woodstoves and barbeques as well as local industry. Distant emission sources include the vehicle traffic and various industries in the Sacramento metropolitan area and beyond. Carried to the foothills region by the prevailing southwesterly winds found in the valley, pollutants emitted in Sacramento and the San Francisco Bay area affect local ambient pollutant concentrations. Inversion layers occur when a layer of warm air traps a layer of cold air beneath it, preventing vertical dispersion of air contaminants. These layers are created by seasonal temperatures and contribute to seasonal concentrations of airborne contaminants, elevating air pollution levels.

Climate

Mild, wet winters and hot, dry summers characterize the climate of central and western Placer County. Precipitation generally occurs between November and April. Prevailing winds are from the south and southwest, and local air quality is influenced by the transportation of emissions from upwind mobile and stationary pollution sources in south Placer County, the Sacramento metropolitan area, and the San Francisco Bay area. Additionally, in the late fall and early spring the Sacramento Valley Air Basin frequently experiences calm atmospheric conditions, contributing to the creation of inversion layers, which results in higher concentrations of pollutants near ground level.

Air Contaminants

Ozone (O_3), carbon monoxide (CO), and particulate matter (PM_{10}) are pollutants of particular concern in the area. Under the air quality standards mandated by the California Clean Air Act, the Sacramento Valley Air Basin is currently in non-attainment for particulate matter and is designated as serious non-attainment for O_3. This air basin is also in non-attainment for federal O_3 standards under the Federal Clean Air Act. South Placer County is a federal maintenance area for carbon monoxide standards. This region was in non-attainment for federal CO standards until 1998. As shown in the tables included in this discussion, violations of O_3 and particulate matter standards have occurred and continue to occur within the region.

Ozone

O_3 concentrations that exceed state standards primarily occur between May and October when inversion layers are formed and "sunlight and hot weather cause ground-level O_3 to form in

harmful concentrations" (U.S. Environmental Protection Agency [EPA] 2000a). Ozone itself is not a direct emission. It results from atmospheric chemical reactions between reactive organic compounds (ROC) and nitrogen oxides (NO_X), which are discharged into the air from motor vehicle emissions and the evaporation of various organic compounds (e.g., fuels and solvents). Rather than being the result of a few significant emission sources, O_3 concentrations are the cumulative effect of regional development patterns and associated traffic movements. Current projections for 2005 summer emissions show that 72% of the O3-forming emissions within the Sacramento federal O_3 non-attainment area will come from mobile sources, including on-road vehicles, off-road equipment, farm equipment, boats, aircraft, trains, and heavy duty trucks, while stationary/area sources, such as power plants, consumer products, coating and cleaning solvents, agricultural pumps, and petroleum production and marketing will contribute 28% of the emissions (Sacramento Metropolitan Air Quality Management District [SMAQMD] 2003). Generally, the NO_X concentration is similar to the O_3 concentration, and O_3 levels rapidly decline once the precursors have been depleted. *Table 7.1* shows measured O_3 levels in the project vicinity. There has been a decline in the average number of days that measured O_3 levels in the region exceeded the California standards of 0.09 parts per million (ppm) since 1992. "The overall rate of population exposure to ozone is down, and the number of days and hours over the standard are also trending down" (SMAQMD 2003). The average annual number of days above the standard between 1992 and 1997 are 21.83 and 25.83 for the Auburn and Rocklin stations, respectively, and 20.75 and 17.60, respectively, between 1998 and 2002. Since 2000, the Colfax station has not recorded any days above state or federal standards for O_3.

Table 7.1
Air Quality Data Summary, 1992-2001 Ozone Levels (ppm)

		Days above Standard			1-Hour Observations		8-Hour Averages	
		1-Hour		8-Hour				
Station	Year	State	Federal	Federal	Maximum	3-Year Average 4th Highest	Maximum	3-Year Average 4th Highest
Auburn	1992	36	3	26	0.140	0.140	0.122	0.105
	1993	15	0	15	0.120	0.130	0.107	0.101
	1994	28	4	25	0.133	0.130	0.117	0.102
	1995	26	2	18	0.148	0.131	0.119	0.105
	1996	22	1	17	0.125	0.131	0.110	0.103
	1997	4	0	1	0.106	0.124	0.089	0.095
	1998	15	5	16	0.144	0.126	0.113	0.095
	1999	24	2	25	0.142	0.132	0.106	0.097
	2000	22	0	17	0.124	0.132	0.107	0.102
	2001	22	0	21	0.118	0.123	0.107	0.101
	2002	16	3	15	0.136	0.124	0.115	0.101
Rocklin	1992	41	7	24	0.170	0.130	0.122	0.102
	1993	21	3	9	0.150	0.140	0.120	0.101
	1994	29	1	19	0.128	0.140	0.106	0.103
	1995	25	3	17	0.146	0.133	0.106	0.100
	1996	30	1	20	0.130	0.129	0.110	0.100
	1997	9	0	4	0.113	0.129	0.096	0.095

Station	Year	Days above Standard			1-Hour Observations		8-Hour Averages	
		1-Hour		8-Hour				
		State	Federal	Federal	Maximum	3-Year Average 4th Highest	Maximum	3-Year Average 4th Highest
Rocklin	1998	16	3	12	0.143	0.130	0.119	0.094
	1999	17	3	11	0.128	0.128	0.111	0.092
	2000	16	0	12	0.118	0.128	0.098	0.093
	2001	18	1	8	0.128	0.127	0.097	0.091
	2002	21	2	15	0.135	0.119	0.111	0.092
Colfax	1992	17	1	12	0.130	0.110	0.098	0.092
	1993	9	0	4	0.120	0.110	0.097	0.092
	1994	15	0	12	0.122	0.120	0.107	0.092
	1995	16	1	11	0.130	0.119	0.100	0.092
	1996	4	0	5	0.108	0.117	0.091	0.091
	1997	2	0	2	0.10.	0.109	0.097	0.086
	1998	11	1	8	0.132	0.103	0.108	0.086
	1999	9	1	9	0.159	0.105	0.093	0.86
	2000	10	0	5	0.119	0.115	0.095	0.089
	2001	0	0	0	0.044	0.106	NA	NA
	2002	0	0	0	0.044	0.106	NA	NA

Source: California Air Resources Board 2003a

Carbon Monoxide

"Carbon monoxide, or CO, is a colorless, odorless gas that is formed when carbon in fuel is not burned completely. It is a component of motor vehicle exhaust, which contributes about 56 percent of all CO emissions nationwide," while in urban areas, as much as 85 to 95 percent of CO emissions may be from mobile sources (EPA 2000b). High concentrations of CO are generally a localized wintertime pollution problem, the result of a combination of traffic volumes, traffic congestion, and atmospheric conditions. State standards for CO concentrations are 20 ppm in a 1-hour period and 9 ppm over an 8-hour period. Increased potential for violations of air quality standards occurs when vehicles are in a "cold start" operating mode, idling, or at low speeds. Intersections are usually the "hot spots" where violations occur. These violations are normally short-term because CO tends to dissipate rapidly into the atmosphere. The monitoring station for CO nearest to the project area is on North Sunrise Boulevard in Roseville. The state and federal 8-hour average standards for CO have not been exceeded at this station since it began measuring CO in 1993 (California Air Resources Board [CARB] 2003b). Another station on Rocklin Road in Rocklin measured CO from 1991 to 1996; 8-hour average standards were not exceeded there, either (CARB 2003b).

Particulate Matter

Particulate matter is a type of air pollution that consists of varying mixtures of particles suspended in the air. Particulate matter less than 2.5 microns in diameter is referred to as $PM_{2.5}$, or fine particles. Particulate matter between 2.5 and 10 microns in diameter is referred to as PM_{10}, or coarse particles. (In comparison, a human hair is about 75 microns in diameter.) Both the State of California and the EPA regulate coarse particles, while only the EPA regulates fine

particles. The EPA's fine particle standard was adopted in July 1997 and is being phased in over six years; no monitoring stations for $PM_{2.5}$ have been established yet in the project vicinity. The station on North Sunrise Boulevard in Roseville recorded one day above the national standard for PM_{10} in 1999 (CARB 2003c).

Major sources of coarse and fine particles include agricultural burning, construction activities, wood burning stoves, vehicle exhaust, wind-blown dust, vehicles traveling on unpaved roads, materials handling, and crushing and grinding operations. Particulate matter emissions can result in environmental effects such as reduced visibility, water pollution (as particulates settle out of the air and into water bodies), degradation of vegetation (as particulates settle on leaves as dust), and damage to structures (EPA 2000c). Particulate matter can injure crops, trees, and shrubs, as well as cause damage to other surfaces, such as metal and fabrics, through chemical reactions. Fine particles also impair visibility by scattering light and reducing the visual range in urban, rural, and wilderness areas. The haze caused by fine particles can diminish crop yields by reducing sunlight.

State standards for PM_{10} are 50 micrograms per cubic meter ($\mu g/m^3$; a microgram is one one-millionth of a gram) averaged over a 24-hour period and 30 $\mu g/m^3$ for an annual geometric mean. The federal standard is 150 $\mu g/m^3$ for a 24-hour period. The federal standard for $PM_{2.5}$ is 65 ug/m3 measured over a 24-hour period and 15 ug/m3 averaged over a year. *Table 7.2* presents measured PM_{10} levels at area sampling stations. As shown, these measured PM_{10} levels have exceeded the California standard several times since 1992.

Table 7.2
Air Quality Data Summary, 1992-1996 Measured PM_{10} Levels ($\mu g/m^3$)

Station	Year	State	Federal	Annual	Geometric	3-Year Average	Maximum Observation
Rocklin	1991	6	NA	45.7	7.1	NA	55
	1992	0	NA	25.9	15.7	NA	48
	1993	0	0	20.3	21.3	15	41
	1994	3	0	21.8	23.1	20	51
	1995	3	0	20.8	21.5	22	55
	1996	0	0	16.6	18.3	21	34
	1997	0	0	19.0	19.9	20	43
	1998	1	0	16.6	19.4	19	70
	1999	24	0	21.3	24.8	21	75
	2000	0	0	19.8	20.8	22	46
	2001	12	0	18.8	20.9	22	57
	2002	0	NA	20.2	21.7	21	36
Roseville	1993	6	0	23.4	24.3	NA	52
	1994	15	0	23.3	25.0	NA	65
	1995	6	0	22.8	23.4	24	61

Station	Year	State	Federal	Annual	Geometric	3-Year Average	Maximum Observation
Roseville	1996	0	0	19.2	20.8	23	39
	1997	0	0	20.8	21.8	22	50
	1998	13	0	19.4	22.3	22	67
	1999	24	0	22.5	26.1	23	89
	2000	6	0	22.1	23.9	24	58
	2001	18	0	21.8	24.2	25	59
	2002	6	0	22.1	24.6	24	58
Truckee[a]	1988	0	NA	35.0	3.3	NA	35
	1996	0	NA	15.9	21.8	NA	49
	1997	62	NA	27.4	31.0	NA	136
	1998	18	NA	21.9	22.1	25	71
	1999	0	NA	25.9	27.9	27	44
	2000	0	NA	19.2	14.6	22	50

NA *no data available*

a *No data available for this station between 1989 and 1995.*

Source: California Air Resources Board 2003

Health Effects

Air pollution affects everyone to some degree, however pregnant women, children, the elderly, and people with respiratory or cardiovascular disease are more susceptible to experiencing health effects from air pollution. Even at low concentrations, ground-level O_3 can adversely affect everyone (EPA 2000a). In relatively low concentrations, O_3 can damage vegetation, crack rubber, and irritate the lungs and respiratory system when inhaled. At higher concentrations, O_3 can impact public health by directly affecting the lungs, causing respiratory irritation and reduction in lung function. Lung flow and air passage through lung tissues can be seriously decreased, resulting in symptoms such as coughs, chest discomfort, headaches, and eye irritation. "Repeated exposure to ozone pollution for several months may cause permanent lung damage" (EPA 2000a). Persons suffering from asthma, bronchitis, other respiratory ailments, and cardiovascular disease are particularly susceptible to O_3, as well as children and persons engaged in heavy exercise, but "even healthy people that are active outdoors can be affected when ozone levels are high" (EPA 2000a). At high concentrations, this pollutant can cause severe damage to the lungs.

Inhaled CO passes through the lungs to enter the blood stream, interfering with the transfer of oxygen to the blood. This reduces the amount of oxygen that reaches the muscles, including the heart, brain, and other body tissues – resulting in adverse cardiovascular and central nervous system effects. Even in healthy adults, CO inhalation can result in drowsiness, fatigue, inability to concentrate, nausea, headache, changes in heart function, impairment of vision, and slowed reflexes. At very high concentrations, CO inhalation can be fatal (EPA 2000b).

Particulate matter causes harm when inhaled particulates lodge deep within the lungs, causing health problems as the human immune system reacts to the presence of these foreign particles. Fine particles can lodge deeper within the lungs than coarse particles, posing a more serious

health threat. Scientific studies have linked inhaled PM to several significant health problems, including "aggravated asthma, increases in respiratory symptoms like coughing and difficult or painful breathing, chronic bronchitis, decreased lung function, and premature death" (EPA 2000c). Very small particulates of certain substances can cause direct lung damage or can contain absorbed gasses that may be harmful. Populations that are especially sensitive to the health effects of exposure to particulate matter include children, the elderly, exercising adults, individuals with influenza, asthmatics, and those who suffer from chronic obstructive pulmonary disease. "Health problems for sensitive people can get worse if they are exposed to high levels of PM for several days in a row" (EPA 2000c), and "both short- and long-term exposures to PM have been shown to lead to harmful health effects" (CARB 2003b). Recent studies suggest that prolonged exposure to PM may affect the growth and functioning of children's lungs; other studies have found an association between fine particle air pollution and premature death related to decreases in cardiopulmonary functions. "In addition, scientists have observed higher rates of hospitalizations, emergency room visits and doctor's visits for respiratory illnesses or heart disease during times of high PM concentrations" (CARB 2003b).

7.2 REGULATORY FRAMEWORK

The proposed project is in the Sacramento Valley Air Basin, one of 14 air basins in the state; Placer County is one of 11 counties within this air basin. The County's Air Pollution Control District (APCD) has the primary responsibility for attainment and maintenance of air quality standards within their jurisdiction. The project area is also subject to the regulations of the Sacramento Air Quality Maintenance Area, CARB, and EPA. Both the State of California and the EPA have established and published air quality standards as shown in *Table 7.3*. In 1994, the Placer County APCD developed the *Air Quality Attainment Plan,* which presents mitigation strategies for reducing emission concentrations and to meet state and federal air quality standards. Additionally, the Lead Agency will use the policies contained in the *Placer County General Plan* and the *Auburn/Bowman Community Plan* related to air quality to evaluate the proposed project. This section provides a list of those policies, ordinances, and regulations that will be used to evaluate and implement this project.

Federal and State Air Quality Regulations

On both the federal and state levels, a distinction is made for regulatory purposes between "criteria air pollutants" and "toxic air pollutants." Criteria air pollutants are those for which health-based concentration standards were first promulgated under the 1970 amendments to the Federal Clean Air Act. Regulation of criteria air pollutants is achieved through federal and state ambient air quality standards (AAQS) and emission limits for individual sources. Air toxics, also referred to as Hazardous Air Pollutants, are airborne substances that are capable of causing short-term (acute) and/or long-term (chronic or carcinogenic) adverse human health effects. Hazardous Air Pollutants are controlled through regulations on individual sources of these pollutants.

Federal Regulations

As required by the Federal Clean Air Act, the EPA established federal AAQS for the original six criteria air pollutants identified in the Federal Clean Air Act: ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, suspended particulate matter, and lead. Standards for these pollutants

are listed in *Table 7-3*. These standards represent the levels of air quality, with an adequate margin of safety, necessary to protect the public health and welfare.

Table 7.3
Ambient Air Quality Standards

Pollutant (measurement)	***Averaging Time***	***Standard***	
		State	***Federal***
Carbon monoxide (ppm)	8 hours	9	9
	1 hour	20	35
Nitrogen dioxide (ppm)	Annual mean	--	0.053
	1 hour	0.25	--
Ozone (ppm)	1 hour	0.09	0.12
	8 hours	--	0.08
Lead ($\mu g/m^3$)	Quarterly	--	1.5
	30 days	1.5	--
Particulate matter less than 10 microns in diameter ($\mu g/m^3$)	Annual mean	20 [a]	50
	24 hours	50	150
Particulate matter less than 2.5 microns in diameter ($\mu g/m^3$)	Annual mean	12 [a]	15
	24 hours	--	65
Sulfur dioxide (ppm)	Annual mean	--	0.03
	24 hour	0.04	0.14
	3 hour	--	0.50 [b]
	1 hour	0.25	--

Notes:

-- *no standard*

ppm *parts per million*

μg/m3 *micrograms per cubic meter*

California standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1-hour), nitrogen dioxide, suspended particulate matter (PM10), and visibility reducing particles are values that are not to be exceeded. The sulfur dioxide (24-hour), sulfates, Lake Tahoe carbon monoxide, lead hydrogen sulfide and vinyl chloride standards are not to be equaled or exceeded.

National standards, other than ozone and those based on annual averages or arithmetic means are not to be exceeded more than once a year. The ozone standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above the standard is equal to or less than one.

a *On June 20, 2002, the Air Resources Board approved staff's recommendation to revise the PM10 annual average standard to 20 μg/m3 and to establish an annual average standard for PM2.5 of 12 μg/m3. These standards will take effect on final approval by the Office of Administrative Law, which is expected in May 2003. Information regarding these revisions can be found at http://www.arb.ca.gov/research/aaqs/std-rs/std-rs.htm.*

b *This is a secondary standard.*

Source: California Air Resources Board

The Federal Clean Air Act requires the states to classify air basins (or portions thereof) as either "attainment" or "non-attainment" with respect to the criteria air pollutants, based on whether or not the federal AAQS have been achieved, and to prepare air quality plans containing

emission reduction strategies for those areas designated as "non-attainment." The project area is located in the Sacramento Valley Air Basin, which is in severe non-attainment for federal O_3 standards. If attainment is not demonstrated by 2005, substantial financial penalties and/or stricter air quality standards could be imposed on all jurisdictions within the Sacramento Valley Air Basin, including Placer County.

Until 1998, the Sacramento Valley Air Basin was classified as "non-attainment" with respect to the federal CO standards. Currently, the Sacramento Valley Air Basin is considered a federal planning area for CO standards. A federal planning area is a basin that was in non-attainment and needs to demonstrate compliance with the federal standards for two consecutive years and to develop a maintenance plan demonstrating that emission levels will remain in compliance for at least ten years to achieve attainment again (CARB 1998).

State Regulations

The State of California has established its own ambient standards for the criteria pollutants, which are presented with the federal AAQS in *Table 7-3*. These standards are referred to as state AAQS and are equal to or more stringent than their federal counterparts. State AAQS have also been established for certain pollutants not covered by the federal AAQS, such as hydrogen sulfide and vinyl chloride. Placer County has been designated as non-attainment for state AAQS for O_3 and PM_{10}, and is unclassified for CO (meaning there is not enough data to classify the region attainment or non-attainment for this pollutant) (CARB 2003c). Placer County has been designated as attainment for all other criteria air pollutants.

Sacramento Area Regional Ozone Attainment Plan

The Federal Clean Air Act requires non-attainment areas to develop air quality plans that contain strategies for achieving attainment. In response to the non-attainment designation of the Sacramento Valley Air Basin with respect to federal O_3 standards, the three Air Quality Management Districts and two Air Pollution Control Districts in the Sacramento region developed the Sacramento Area Regional Ozone Attainment Plan, also known as the 1994 State Implementation Plan (SIP). This document identifies a comprehensive regional strategy to reduce O_3 levels in the region. The SIP focuses on reducing emissions of ROC and NO_X, as these pollutants are the precursors to O_3. To attain a one-ton-per-day reduction in ROC and NO_X emissions the SIP requires implementation of transportation control measures and land use control measures.

Local Regulations

Placer County 1991 Air Quality Attainment Plan

The 1988 California Clean Air Act also requires non-attainment areas to develop air quality plans for achieving attainment. In accordance with this regulation, the Placer County APCD developed the 1991 Air Quality Attainment Plan, which discusses policy goals and guidelines for achieving air quality standards. This Plan focuses on reducing emissions of ROC and NO_X as a way to combat the high O_3 concentrations in Placer County. Strategies to reach "attainment" levels of O_3 include stationary source controls, transportation control measures, indirect source control measures, and coordination with the Placer County Transportation Planning Agency in development of the County Congestion Management Program.

Auburn/Bowman Community Plan

The *Auburn/Bowman Community Plan's* Air Quality section of the Environmental Resources Management Element provides guidance in land use and development policies for implementation by the Placer County APCD. The following *Auburn/Bowman Community Plan* policies are applicable to the proposed project:

Goals IV.B.6.a

1. Protect and improve air quality in the Auburn area.
2. Assure Placer County's compliance with state and federal air quality standards.

6.B.5 Use Indirect Source Control Program strategies for all subsequent, new or revised land uses within the Plan area to reduce emissions. These are to be developed in the EIR for the Plan area and applied through individual land use performance standards.

6.B.6 Use Direct Source Review as outlined in the EIR for the Plan to reduce emissions from existing land uses.

6.B.7 Produce mitigations for air quality impacts associated with adoption of the Community Plan and include them in the monitoring plan.

6.B.9 Projects which result in 200 or more trip-ends may require an air quality analysis to be submitted for review and approval.

Placer County General Plan

The *Placer County General Plan* Air Quality section of the Natural Resources Element provides guidance in land use and development policies for implementation by the Placer County APCD (PCAPCD). The following General Plan policies are applicable to the proposed project:

Goal 6.F To protect and improve air quality in Placer County.

6.F.2 The County shall develop mitigation measures to minimize stationary source and area source emissions.

6.F.5 The County shall encourage project proponents to consult early in the planning process with the County regarding the applicability of countywide indirect and area wide source programs and transportation control measures (TCM) programs. Project review shall also address energy-efficient building and site designs and proper storage, use, and disposal of hazardous materials.

6.F.6 The County shall require project level environmental review to include identification of potential air quality impacts and designation of design and other appropriate mitigation measures or offset fees to reduce impacts. The County shall dedicate staff to work with project proponents and other agencies in identifying, ensuring the implementation of, and monitoring the success of mitigation measures.

6.F.7 The County shall encourage development to be located and designated to minimize direct and indirect air pollutants.

6.F.8 The County shall submit development proposals to the PCAPCD for review and comment in compliance with CEQA prior to consideration by the appropriate decision-making body.

6.F.9 In reviewing project applications, the County shall consider alternatives or amendments that reduce emissions of air pollutants.

6.F.10 The County may require new development projects to submit an air quality analysis for review and approval. Based on this analysis, the County shall require appropriate mitigation measures consistent with the PCAPCD's 1991 Air Quality Attainment Plan (or updated edition).

6.F.11 The County shall apply the buffer standards described on page 20 in Part I of this Policy Document and meteorological analysis to provide separation between possible emission/nuisance sources (such as industrial and commercial uses) and residential uses.

Goal 6.G To integrate air quality planning with the land use and transportation planning process.

6.G.1 The County shall require new development to be planned to result in smooth flowing traffic conditions for major roadways. This includes traffic signals and traffic signal coordination, parallel roadways, and intra- and inter-neighborhood connections where significant reductions in overall emissions can be achieved.

6.G.3 The County shall encourage the use of alternative modes of transportation by incorporating public transit, bicycle, and pedestrian modes in County transportation planning and by requiring new development to provide adequate pedestrian and bikeway facilities.

7.3 IMPACTS

Significance Criteria

Appendix G of the CEQA Guidelines provides the following criteria for determining the significance of the impact of project-generated air pollutant emissions on regional air quality. A project would be considered to have significant impacts if it:

- Conflicts with or obstructs implementation of the applicable air quality plan,
- Violates any air quality standard or contributes substantially to an existing or projected air quality violation,
- Results in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for O_3 precursors),
- Exposes sensitive receptors to substantial pollutant concentrations, or
- Creates objectionable odors affecting a substantial number of people.

The Placer County APCD is responsible for compliance with State and federal air quality standards (*Table 7.3*). The Placer County APCD has established the New Source Review Rule that presents thresholds of pollutant emissions above which application of Best Available Control Technology is required on both new and modified emissions sources. These thresholds, listed in *Table 7.4*, serve as air quality standards and can be used to determine the significance of air quality impacts under the second significance criterion listed above. Project emissions that exceed threshold values could have a significant effect on regional air quality and the attainment of federal and state standards. An air quality impact would be significant if the proposed project is anticipated to generate emissions in excess of the APCD Significance Thresholds. Emissions that exceed the thresholds for implementation of mitigation measures require mitigation. However, if the emissions continue to exceed the thresholds for implementation of mitigation measures following implementation of applicable measures, the impact is not significant.

Table 7.4
APCD Thresholds (pounds per day)

Air Contaminant	*Thresholds for Implementation of Mitigation Measures*	*Significance Thresholds*
Reactive organic compounds (ROC/TOC)	10	82
Nitrogen oxides (NO_X)	10	82
Sulfur oxides (SO_X)	10	136
Particulate matter less than 10 microns in diameter (PM_{10})	82	82
Carbon monoxide (CO)	550	550

Source: Placer County Air Pollution Control District

Project Impacts

Impacts Determined to be Less Than Significant

Conflict with or Obstruct Implementation of the Applicable Air Quality Plan. The project area is governed by the 1991 Air Quality Attainment Plan developed by Placer County APCD. This Plan focuses on reducing emissions of ROC and NO_X as a way to combat the high O_3 concentrations in Placer County through implementation of stationary source controls, transportation control measures, and indirect source control measures. As discussed in **CHAPTER 6, TRANSPORTATION AND CIRCULATION**, the proposed project is expected to result in an increase of employment levels in certain County departments and minor changes in existing circulation patterns. Implementation of the proposed project is expected to accommodate 180 new employees at DeWitt Center by 2010. Concurrently, the County is in the process of implementing plans for construction of a new justice center in southern Placer County. This facility is being constructed in phases, with completion of most phases expected in 2007. It would accommodate the transfer of 249 employees out of DeWitt Center. Some transfers would occur at the end of 2005 and the rest in 2007. Therefore there will be a net decrease in staff at DeWitt Center of 69 personnel by 2010, and vehicular emissions of ROC and NO_X will decline. Additionally, the implementation of Best Available Control Technology, as required under *Mitigation Measure 7.1a*, will minimize ROC and NO_X emissions from other sources associated with the proposed project.

Violate Any Air Quality Standard as a Result of Operational Emissions. The Placer County **APCD Significance Thresholds** shown in *Table 7.4* serve as local air quality standards. In addition, Placer County is designated as non-attainment for PM_{10} and severe non-attainment for O_3, which is formed through reactions between NO_X and ROC. Emissions of these pollutants in excess of the **APCD Significance Thresholds** could contribute to the existing air quality standards violations. Operational emissions are those that occur during operation of the proposed project, including emissions from onsite stationary sources (such as building heating and cooling equipment and power generators), landscape maintenance activities, and mobile sources (most commonly daily traffic trips to and from the project area).

Stationary Sources

Stationary emission sources within the project (referred to as Area Sources by the URBEMIS 2001 program) include water heaters, building heating and cooling systems, power generators, and landscape maintenance equipment and chemicals. Fireplaces and woodstoves are not included in the variables for stationary sources associated with the proposed project as these types of amenities are not used in office buildings and will not be included in the Children's Emergency Shelter or Women's Center (CES or WC) facilities.

The open burning of construction debris (i.e., scrap lumber, packaging material), if it occurred, could contribute to stationary source emissions. As stated by the Placer County APCD, this type of burning is strictly prohibited by District Rule, as well as County and State rules and regulations. The open burning of wood and vegetative waste materials during construction could also result in increased emissions. The County does not propose to dispose of vegetative material through burning.

URBEMIS 2001 Inputs for Analysis of Stationary Source Emissions. The URBEMIS 2001 program estimates "Area Source" project emissions based on the use of natural gas and landscape maintenance activities. Full details of the changes made to the variables used to estimate emissions from stationary sources are included in Appendix C.

Mobile Sources

As described in **CHAPTER 6, TRANSPORTATION AND CIRCULATION**, the proposed development will accommodate 180 new employees at DeWitt Center, which currently has a staffing level of 1,917 people. DKS Associates prepared a Transportation Impact Analysis for the proposed project (Appendix B). That analysis included a "cordon count" for all entrances and exits to DeWitt Center in the spring of 2002, which found that DeWitt Center currently produces approximately 16,800 daily trips. While not all traffic trips to and from DeWitt Center are made by employees, for evaluation purposes this EIR uses a traffic generation rate of 8.77 daily trips per employee. Therefore, the anticipated 180 new employees will result in approximately 1,578 new daily vehicle trips.

URBEMIS 2001 Inputs for Analysis of Vehicular Emissions. The URBEMIS 2001 program provides an estimate of mobile source project emissions at buildout of the proposed project (2010) and under a cumulative year 2020 scenario. The program considers the traffic trip generation rate, the vehicle fleet mix (i.e., percentages of light duty autos, light duty trucks, heavy duty trucks, motorcycles, etc), the average length of vehicle trips originating and ending at the project area, and proposed provision of sidewalks and trails, bicycle facilities, and street lights and trees in

calculating total vehicle emissions generated by a project. The values used for these variables can be found in the technical information materials in Appendix C.

Impact Analysis by Project Phase

Individual impact analysis is provided for each project phase, as described in **CHAPTER 2, PROJECT DESCRIPTION**. The phases that include building demolition or transfers of employees, Phases A, E, F, G, H, I, and J, will not generate any new traffic trips. Those phases are excluded from the analysis of operational emissions. Phase B consists of construction of the Land Development Building (LDB), which is expected to accommodate 87 new employees by 2010. Phase C consists of construction of the Auburn Justice Center (AJC), which will accommodate 29 new employees. Phase D consists of the rough grading and provision of infrastructure for the CES and WC projects. Although construction of the CES and WC facilities is not included in the currently proposed project, construction is anticipated within the timeframe of the DeWitt Government Center Facility Plan. This EIR provides a program level analysis of CES and WC construction, including preliminary evaluation of the air quality impacts associated with both facilities. This analysis will be revisited during subsequent project-level environmental review for both projects.

Phase B

The LDB is proposed to consist of ±95,000 square feet and will accommodate 87 new employees by 2010. Stationary sources of air pollutants will include building heating and cooling equipment, landscaping maintenance, and 763 new daily traffic trips. The emissions estimated by the URBEMIS 2001 program are presented in *Table 7.5*.

Table 7.5
Phase B Unmitigated Operational Emissions

Pollutant	Emissions by Year and Season							
	Year 2010				Year 2020			
	Stationary		Mobile		Stationary		Mobile	
	Summer	Winter	Summer	Winter	Summer	Winter	Summer	Winter
ROC	0.08	0.05	8.02	6.60	0.08	0.05	4.94	3.90
NO_X	0.64	0.63	4.06	6.30	0.64	0.63	2.48	3.95
CO	0.53	0.25	68.00	62.40	0.53	0.25	48.78	44.41
PM_{10}	0.00	0.00	3.43	3.43	0.00	0.00	3.42	3.42
SO_X	0.00	0.00	0.03	0.02	0.00	0.00	0.03	0.02

Source: URBEMIS 2001

None of these emissions exceed the **APCD Significance Thresholds** or the APCD thresholds for implementation of mitigation measures. In addition, elements of the proposed project, including provision of a section of a Class 1 trail, sidewalks, shade trees, and street lighting will serve to improve opportunities for use of alternative transportation, thus potentially lowering the actual air pollutant emissions. Operation of Phase B of the proposed project will generate less than significant emissions and will not violate any air quality standards.

Phase C

The AJC is proposed to consist of ±67,000 square feet of building space in the main building, with an additional ±28,000 square feet in the ancillary building. The justice facilities will accommodate 29 new employees by 2010. Stationary sources of air pollutants will include building heating and cooling equipment, landscaping maintenance, and 254 new daily traffic trips. The emissions estimated by the URBEMIS 2001 program are presented in *Table 7.6*.

Table 7.6
Phase C Unmitigated Operational Emissions

Pollutant	Emissions by Year and Season							
	Year 2010				Year 2020			
	Stationary		Mobile		Stationary		Mobile	
	Summer	Winter	Summer	Winter	Summer	Winter	Summer	Winter
ROC	0.08	0.05	4.20	2.24	0.08	0.05	2.69	1.35
NO_X	0.64	0.63	1.35	2.10	0.64	0.63	0.83	1.32
CO	0.53	0.25	22.61	20.75	0.53	0.25	16.28	14.82
PM_{10}	0.00	0.00	1.14	1.14	0.00	0.00	1.14	1.14
SO_X	0.00	0.00	0.01	0.01	0.00	0.00	0.01	0.01

Source: URBEMIS 2001

None of these emissions exceed the **APCD Significance Thresholds** or the APCD thresholds for implementation of mitigation measures. As with the LDB, elements of the proposed AJC, including provision of a section of a Class 1 trail, sidewalks, shade trees, and street lighting will serve to improve opportunities for use of alternative transportation, thus potentially lowering the actual air pollutant emissions. Operation of Phase C of the proposed project will generate less than significant emissions and will not violate any air quality standards.

Phase D

The CES and WC facilities are proposed to consist of a total of ±36,500 square feet of building space in three buildings and up to ten independent dwelling units of 800 square feet each. The CES will accommodate six new employees and 27 new clients by 2010. The new clients will be children, and therefore will not drive. The WC is anticipated to accommodate seven new employees and five new clients by 2010. For the purposes of this programmatic-level analysis, the clients of the WC are assumed to generate 8.77 traffic trips per day as that is the average trip generation per employee for land uses at DeWitt Center. This analysis will be revisited during subsequent project-level environmental review for the both the CES and WC projects. Stationary sources of air pollutants will include building heating and cooling equipment, landscaping maintenance, "consumer products" (i.e., hairspray and cleaning products) and 158 new daily traffic trips. The emissions estimated by the URBEMIS 2001 program are presented in *Table 7.7*.

Table 7.7
Phase D Unmitigated Operational Emissions

Pollutant	Emissions by Year and Season							
	Year 2010				Year 2020			
	Stationary		Mobile		Stationary		Mobile	
	Summer	Winter	Summer	Winter	Summer	Winter	Summer	Winter
ROC	0.63	0.51	2.39	1.62	0.63	0.51	1.48	0.94
NO_X	0.28	0.26	0.99	1.60	0.28	.026	0.64	1.04
CO	1.21	0.11	19.21	16.86	1.21	0.11	13.64	12.01
PM_{10}	0.00	0.00	1.02	1.02	0.00	0.00	1.02	1.02
SO_X	0.00	0.00	0.01	0.01	0.00	0.00	0.01	0.01

Source: URBEMIS 2001

None of these emissions exceed the **APCD Significance Thresholds** or the APCD thresholds for implementation of mitigation measures. Operation of Phase D of the proposed project will generate less than significant emissions and will not violate any air quality standards. This analysis will be revisited during subsequent project-level environmental review of the CES and WC projects.

As shown in *Tables 7.5, 7.6*, and *7.7*, the operational emissions of each individual project phase will not violate any air quality standards. *Table 7.8* shows the aggregated operational emissions of these three phases.

Table 7.8
Aggregate Unmitigated Operational Emissions

Pollutant	Emissions by Year and Season							
	Year 2010				Year 2020			
	Stationary		Mobile		Stationary		Mobile	
	Summer	Winter	Summer	Winter	Summer	Winter	Summer	Winter
ROC	0.79	0.61	14.61	10.46	0.79	0.61	9.11	6.19
NO_X	1.28	1.26	5.32	8.25	1.28	1.26	3.95	6.31
CO	1.58	0.5	89.09	81.75	1.58	0.5	78.70	71.24
PM_{10}	0.00	0.00	4.49	4.49	0.00	0.00	5.58	5.58
SO_X	0.00	0.00	0.04	0.03	0.00	0.00	0.05	0.04

Source: URBEMIS 2001

None of the aggregated emission estimates exceed the **APCD Significance Thresholds**, although Mobile Source emissions of ROC in Summer 2010 and Winter 2010 exceed the thresholds for implementation of mitigation measures by 4.61 pounds per day and 0.46 pounds per day respectively. As stated above, elements of the LDB and AJC will serve to improve opportunities for use of alternative transportation, thus potentially lowering the actual air pollutant emissions. The construction projects also incorporate the following design elements that will serve to minimize emissions:

- Electrical outlets shall be provided around building perimeters to accommodate electric landscape equipment.

- Energy-efficient technology shall be incorporated in all construction (e.g., insulations, window glazing and or shading, ventilation, etc.).
- Energy-efficient heating/cooling units and appliances (cooking equipment, refrigerators, furnaces, and boiler units), including low NO_X water heaters, as appropriate, and HVAC units equipped with a catalyst system that can convert up to 70% of ground level O_3 that passes over the condenser coils into oxygen (i.e., the PremAir system), if such system is available and economically feasible at the time building permits are issued. This system is considered feasible if the additional cost is less than 10 percent of the base HVAC unit. Where water heaters are proposed in new construction, use of low NO_X water heaters is required per District Rule 225.
- Landscaping plans shall incorporate native and/or drought-resistant species (plants, trees, and bushes) to reduce the demand for use of landscape maintenance equipment.
- Existing plants and trees shall be preserved to the extent feasible, including preservation of the onsite oak woodland habitat, to provide a biological means of reducing air contaminants in the vicinity.

In addition, the County is currently implementing plans to construct a justice center in southern Placer County. It is anticipated that by 2010, 249 existing employees at DeWitt Center will be transferred to the South Placer Justice Center. With this transfer there will be a net decrease in employment at DeWitt Center within the departments housed in the proposed new buildings of 69 employees. Therefore, the total number of daily trips at DeWitt Center will decrease by approximately 600 trips compared to existing conditions. Under this scenario, vehicular emissions in 2010 will be less than estimated in this analysis.

Cumulatively Considerable Net Increase of Any Criteria Pollutant for Which the Project Region is Non-Attainment. Placer County is currently in non-attainment for PM_{10} and is designated as severe non-attainment for O_3, which is formed through reactions between NO_X and ROC. NO_X and ROC are primarily emitted from mobile sources. As discussed above, implementation of the proposed project and other current facility plans will result in a net decrease of employees at DeWitt Center by 2010, which will translate to a decline in pollutant emissions associated with vehicle usage. Pollutant emissions are further discussed under Impact 7.1. Mitigation measures are provided to control all emissions.

Project-generated PM emissions are expected to result from a combination of construction and demolition activities, vehicle exhaust, and wind-blown dust. Demolition and construction project emissions would occur only in the short-term. Upon completion of construction and demolition projects, no significant continued PM emissions are anticipated. As provided in *Mitigation Measure 5.2a* (**CHAPTER 5, AESTHETICS**), all demolition sites not currently proposed for new construction will be revegetated and/or covered to prevent wind-blown dust emissions. This mitigation measure is incorporated in this chapter by reference as *Mitigation Measure 7.1b*.

Create Objectionable Odors Affecting a Substantial Number of People. The proposed project includes building demolition and construction of new office buildings and shelter/transitional housing facilities. The demolition, construction, and operation of the proposed new facilities are not expected to create objectionable odors within the project vicinity.

Potentially Significant Impacts

Impact 7.1: Violate Any Air Quality Standard or Contribute Substantially to an Existing or Projected Air Quality Violation as a Result of Construction Emissions.

Significance Before Mitigation:	Significant
Mitigation:	7.1a through 7.1j
Significance After Mitigation:	Significant and Unavoidable with respect to NO_X; Less than Significant with respect to other pollutants

Air pollutant emissions that occur during demolition and construction activities would be generated by operation of heavy equipment, earthwork, and paving. Demolition could also generate dust emissions. As with operational emissions, the **APCD Significance Thresholds** shown in *Table 7.4* serve as local air quality standards. Placer County is designated as non-attainment for PM_{10} and severe non-attainment for O_3, which is formed through reactions between NO_X and ROC. Emissions of these pollutants in excess of the **APCD Significance Thresholds** could contribute to the existing air quality violation.

Equipment Emissions

During demolition, grading, and construction activities, heavy equipment operation would produce exhaust emissions. During their operations, tractors, dozers, scrapers, etc., would emit those air contaminants described previously as well as nitrogen and sulfur oxide compounds (NO_X and SO_X). *Table 7.9* shows the EPA-AP-42 equipment emission factors by equipment type.

Table 7.9
Construction Equipment Exhaust Emissions (grams/horsepower-hour)

Equipment	*CO*	*NO_X*	*PM_{10}*	*SO_x*
Dozer-Diesel	2.8	9.6	0.66	0.93
Tractor-Diesel	6.8	10.10	1.05	0.85
Gasoline 4-Stroke Engine [a]	257.4	4.79	0.06	0.25
Loader-Diesel	6.8	10.10	1.05	0.85
Gasoline 4-Stroke Engine [a]	257.4	4.79	0.06	0.25
Backhoe-Diesel	6.8	10.10	1.05	0.85
Gasoline 4-Stroke Engine [a]	257.4	4.79	0.06	0.25
Trencher-Diesel	9.14	10.02	1.44	0.93
Gasoline 4-Stroke Engine [a]	257.4	4.79	0.06	0.25
Grader-Diesel	3.8	9.6	1.00	0.87
Dump Truck-Diesel	2.8	9.6	1.44	0.89
Gasoline 4-Stroke Engine [a]	376.2	1.92	0.22	0.25
Compactor/Roller-Diesel	3.10	9.30	0.78	1.00
Gasoline 4-Stroke Engine [a]	383.8	2.11	0.22	0.28
Concrete Paver-Diesel	4.57	10.02	0.90	0.93
Off-Road Truck-Diesel	2.8	9.6	0.80	0.89
Other Construction Equipment-Diesel	9.20	11.01	1.44	0.93
Gasoline 4-Stroke Engine [a]	257.4	4.79	0.06	0.25

[a] *Exhaust emissions are adjusted for in-use effects.*
Source: EPA–AP-42, November 1991

Fugitive Dust During Construction

In addition to emissions from the demolition and construction equipment (i.e., vehicle exhaust), the physical actions of demolition, grading, and construction can generate dust emissions. Heavy construction equipment movements on unpaved terrain and exposure of areas of a project site to wind are two sources of airborne dust. Building demolition can also generate dust emissions. Construction scheduling, the type of equipment used, weather conditions, and site conditions are some of the factors that determine how much dust is generated. Dust emissions are estimated by the URBEMIS 2001 program based on these factors. The dust generated by site disturbance consists of both large (greater than 30 microns) and small particles (10 microns and less). The larger particles settle either at the generation site or in the vicinity of the site. The smaller particles (PM_{10} and $PM_{2.5}$) do not settle as quickly and are easily transported by the wind.

Additionally, DeWitt Center occurs within an area known to support some soils that contain naturally occurring asbestos. While the USGS Soil Conservation Service Soil Survey of Placer County and the preliminary geotechnical investigations for the LDB and AJC sites do not indicate that any naturally occurring asbestos is known to occur within DeWitt Center, naturally occurring asbestos could be identified in the field during site preparation and construction activities. Naturally occurring asbestos has been identified at nearby sites, including at a location on nearby Bell Road (Vintze pers. comm.). Should naturally occurring asbestos be found at any of the proposed project sites, grading of the site could disturb the asbestos and release it into the air. *Mitigation Measure 7.1a* provides standard Best Management Practices for controlling both fugitive dust and naturally occurring asbestos emissions during site preparation.

URBEMIS 2001 Inputs for Analysis of Demolition/Construction Emissions

The URBEMIS 2001 program estimates the anticipated levels of ROC, NO_X, CO, PM_{10}, and SO_X emissions to be generated by site preparation, demolition, and construction activities. Emissions are the same for activities occurring during summer or winter. This estimate is based on the square footage of building demolition, average amount of demolition per day, year and length of time of the construction period, size of the project site, amount of grading and paving to occur on a daily basis, the numbers and types of construction vehicles, and use of Best Available Control Technology and other mitigation measures. The numbers and types of construction vehicles were estimated by the Department of Facility Services based on the size of each project phase and the proposed construction. Emission quantities from construction equipment are dependent upon such factors as type and age of equipment used and the length of time this equipment is operated. The emission factors related to these variables are programmed into URBEMIS 2001 and are calculated automatically. The URBEMIS 2001 analysis of implementation of mitigation measures is limited to the measures programmed into the model. No modeling is available for implementation of mitigation measures not included in the URBEMIS program. Details of the changes made to the default variables used to estimate emissions from site preparation and construction activities are included in Appendix C.

There are ten distinct phases in the proposed facility plan, many of which overlap within the plan's seven year timeframe. The following analysis of air pollutant emissions evaluates demolition and construction emissions for each project phase individually and provides an

aggregate of emissions for each year. This analysis is based on the plan phases as described in **CHAPTER 2, PROJECT DESCRIPTION.**

Impact Analysis by Project Phase

Phase A

Phase A includes the demolition of Buildings 2, 3, 4, and 5 of the Bell Gardens Apartments, as well as the wastewater treatment plant (WWTP) facilities. Buildings 2, 3, and 5 each consist of 12,400 square feet, while Building 4 consists of 13,400 square feet. At the WWTP site, two small buildings consisting of a total of 650 square feet, and one building consisting of 4,200 square feet are proposed for demolition. In addition to the buildings at the WWTP site, scattered concrete pads and tanks are also proposed for demolition. An average building height of 20 feet was assumed for this analysis. Phase A does not include any building construction.

This phase is expected to occur between March 2003 and May 2004. The initial action in the phase is the relocation of existing residents of the Bell Gardens Apartments. The relocation is expected to conclude in November 2003, allowing demolition of Buildings 2, 3, 4, and 5 to proceed between December 2003 and February 2004. This will include demolition of 50,600 square feet. Demolition of the WWTP site would occur throughout the period between December 2003 and May 2004.

The results of the URBEMIS 2001 modeling for Phase A are shown in *Table 7.10*. The values in this table represent the emissions expected before any mitigation is applied. Emissions of NO_X for the total phase exceed the **APCD Significance Thresholds**. No other emissions exceed the Significance Thresholds or the thresholds for implementation of mitigation measures.

Table 7.10
Phase A Pounds Per Day Emissions, Unmitigated

Pollutant	*Buildings 2, 3, 4, and 5 Demolition Emissions*	*WWTP Demolition Emissions*	*Total Emissions*
ROC	4.24	3.11	7.35
NO_X	60.18	49.96	110.14
CO	0.00	0.00	0.00
PM_{10}	16.65	9.05	25.70
SO_X	5.24	4.12	9.36

Source: URBEMIS 2001

The URBEMIS 2001 program provides estimates of the reduction in emissions following implementation of selected mitigation measures. The measures applicable to Phase A include watering of the project sites a minimum of twice daily, watering of any unpaved haul routes three times per day, reducing vehicle speed on unpaved routes to 15 miles per hour or less, and proper maintenance of equipment. The estimated emissions following implementation of these measures are shown in *Table 7.11*.

Table 7.11
Phase A Pounds Per Day Emissions, Mitigated

Pollutant	Buildings 2, 3, 4, and 5 Demolition Emissions	WWTP Demolition Emissions	Total Emissions
ROC	4.04	2.96	7.00
NO_X	57.17	47.46	104.63
CO	0.00	0.00	0.00
PM_{10}	12.25	6.79	19.04
SO_X	4.98	3.91	8.35

Source: URBEMIS 2001

Emissions of NO_X still exceed the **APCD Significance Threshold** by 22.63 pounds per day. This represents a significant short-term impact. Additional mitigation measures have been provided in Section 7.4 to reduce these emissions as much as feasible.

Phase B

Construction of the LDB comprises Phase B. This will involve limited grading across the 9-acre project site, construction of a ±95,000 square foot building with associated landscaping, and paving ±97,200 square feet of parking lot. The construction is expected to occur between May 2004 and November 2005. The URBEMIS 2001 program limits construction periods to one year, so this analysis period assumes construction to occur throughout 2004. As the anticipated construction period is approximately 19 months and this analysis assumes construction would occur within a 12-month period, the actual emissions measured in pounds per day are expected to be lower than the emission estimates. This is because the longer construction period would allow a reduction in the intensity of daily activities.

The results of the URBEMIS 2001 modeling for Phase B are shown in *Table 7.12*. The values in this table represent the emissions expected prior to implementation of mitigation measures. Emissions of NO_X during construction exceed the **APCD Significance Thresholds**, while emissions of ROC and SO_X exceed the Placer County APCD thresholds for implementation of mitigation measures.

Table 7.12
Phase B Pounds Per Day Emissions, Unmitigated

Pollutant	Construction and Paving Emissions
ROC	16.44
NO_X	140.90
CO	0.52
PM_{10}	19.88
SO_X	15.63

Source: URBEMIS 2001

The construction mitigation measures applicable to Phase B include watering of the project site a minimum of twice daily, watering of any unpaved haul routes three times per day, reducing

vehicle speed on unpaved routes to 15 miles per hour or less, and proper maintenance of equipment. The amounts of emissions following implementation of these measures are shown in *Table 7.13*.

Table 7.13
Phase B Pounds Per Day Emissions, Mitigated

Pollutant	Construction, Paving, and Excavation Emissions
ROC	15.90
NO_X	134.07
CO	0.52
PM_{10}	13.37
SO_X	14.86

Source: URBEMIS 2001

As the construction emissions of NO_X exceed the Placer County **APCD Significance Thresholds** by 52.45 pounds per day, these emissions represent a significant short-term impact on air quality. Emissions for ROC and SO_X continue to exceed the thresholds for implementation of mitigation measures, however this is not a significant impact of the project as these emissions are below the **APCD Significance Thresholds**. Additional mitigation measures have been included in this EIR to reduce all emissions to the extent feasible. As discussed above, the construction period for this phase is expected to exceed one year, which will reduce the actual daily emission levels.

Phase C

Phase C consists of construction of the AJC. This will involve grading across the 10-acre project site, and construction of ±95,000 square feet of buildings with associated landscaping. Paving associated with the AJC includes a 1,200 square foot entrance patio, 4,800 square foot employee use patio, and ±140,000 square feet of paving for the parking lot area. Phase C also includes expansion of the stormwater detention basin west of the Main Jail. The basin is proposed to be expanded by 80,000 cubic feet, requiring excavation on approximately one-half of an acre. This construction and excavation is expected to occur between June 2004 and December 2005. As above, the URBEMIS 2001 program limits construction periods to one full year. This will shorten the proposed construction period by six months. To obtain the most accurate emissions estimates, Phase C has been evaluated in two segments. The building construction and detention basin excavation are analyzed as occurring throughout 2004 and all paving is analyzed as occurring in six months of 2005, as shown in *Table 7.14*. While this is not a perfectly accurate expression of the proposed construction schedule, it provides a reasonable estimate of project emissions.

Without implementation of mitigation measures, emissions of NO_X during 2004 construction exceed the **APCD Significance Thresholds** by 1.78 pounds per day and NO_X emissions during 2005 paving exceed the standard by 11.80 pounds per day. Emissions of ROC and SO_X during 2004 construction exceed the Placer County APCD thresholds for implementation of mitigation measures.

Table 7.14
Phase C Pounds Per Day Emissions, Unmitigated

Pollutant	Building Construction and Excavation 2004	Paving 2005
ROC	12.06	7.14
NO_X	83.78	93.80
CO	0.52	0.52
PM_{10}	16.56	7.06
SO_X	10.16	9.35

Source: URBEMIS 2001

The construction mitigation measures applicable to Phase C are the same as for Phase B. The amounts of emissions following implementation of these measures are shown in *Table 7.15*.

Table 7.15
Phase C Pounds Per Day Emissions, Mitigated

Pollutant	Building Construction 2004	Paving 2005
ROC	11.73	6.80
NO_X	79.81	89.13
CO	0.52	0.52
PM_{10}	9.42	6.71
SO_X	9.67	8.89

Source: URBEMIS 2001

As the emissions of NO_X for the paving activities still exceed the **APCD Significance Threshold** by 7.13 pounds per day, these emissions represent a significant short-term impact on air quality. Additional mitigation measures to reduce emissions have been included in this EIR.

Phase D

Phase D consists of rough grading and provision of infrastructure at the CES and WC sites. This will involve minor grading across the 7-acres that comprise the project sites, digging of utility line trenches, and paving of the site access roadway (approximately 26,000 square feet of paving). Emissions resulting from facility construction have also been estimated in order to provide a programmatic level of assessment of the future construction. Construction assumptions were based on preliminary site plans. Subsequent project-level environmental review, including analysis of air pollutant emissions, of the proposed facilities will be prepared prior to construction.

The results of the URBEMIS 2001 modeling for Phase D are shown in *Table 7.16*. The proposed construction period extends from August 2004 through July 2006. As in Phase C, this analysis separates the grading and paving activities from the construction activities, with grading and paving occurring in 2004 and construction occurring in 2005. Again, this is not a perfectly accurate representation of the anticipated project schedule but does provide a reasonable estimate of project impacts.

The values in *Table 7.16* represent the unmitigated emissions for each year. In Phase D year 2004 activities, no emissions exceed the **APCD Significance Thresholds**, while in year 2005 activities emissions of NO_X exceed the **APCD Significance Thresholds** by 3.79 pounds per day. Emissions of NO_X in 2004 exceed the APCD thresholds for implementation of mitigation measures by 65.44 pounds per day. Emissions of ROC exceed the Placer County APCD thresholds for implementation of mitigation measures by 2.18 pounds per day in year 2004 and 3.30 pounds per day in 2005.

Table 7.16
Phase D Pounds Per Day Emissions, Unmitigated

Pollutant	Grading and Paving 2004	Building Construction 2005
ROC	12.18	13.30
NO_X	75.44	85.79
CO	0.15	0.15
PM_{10}	17.31	14.52
SO_X	5.84	9.78

Source: URBEMIS 2001

Construction mitigation measures applicable to Phase D include watering of the project site a minimum of twice daily, watering of any unpaved haul routes three times per day, reducing vehicle speed on unpaved routes to 15 miles per hour or less, and proper maintenance of equipment. The amounts of emissions following implementation of these measures are shown in *Table 7.17*.

Table 7.17
Phase D Pounds Per Day Emissions, Mitigated

Pollutant	Grading and Paving 2004	Building Construction 2005
ROC	11.75	12.83
NO_X	71.80	81.64
CO	0.15	0.15
PM_{10}	10.53	11.83
SO_X	5.55	9.30

Source: URBEMIS 2001

Following implementation of the mitigation measures listed above emissions of NO_X in both year 2004 and 2005 are below the **APCD Significance Thresholds**, but still above the thresholds for implementation of mitigation measures. Emissions of ROC also continue to be above the thresholds for implementation of mitigation measures. While these emissions do not represent a significant impact on air quality, additional mitigation measures have been included in this EIR to reduce all emissions as much as feasible.

Phase E

Phase E consists of transferring of employees within DeWitt Center. No air quality impacts are anticipated as a result of these transfers.

Phase F

Transfers of employees from Buildings 1, 7, and 8 and Temporary Structure 6 to the AJC will occur during Phase F. These transfers are scheduled for December 2005 through February 2006. These transfers will allow demolition of the vacated buildings to occur between February and April 2006. Temporary structures are not included in demolition estimates. Buildings 15 through 18, which will be vacated in Phase E, will also be demolished in Phase F between June 2006 and September 2006. Following building demolition, the expansion of the LDB parking lot will occur. This phase is broken down as follows: demolition of ±23,500 square feet between February and April 2006, demolition of ±29,400 square feet between June and September 2006, and paving of ±67,000 square feet between March and August 2007.

The unmitigated emissions estimated by the URBEMIS 2001 modeling are shown in *Table 7.18*. In both portions of this Phase, NO_X emissions slightly exceed the **APCD Significance Thresholds**.

Table 7.18
Phase F Pounds Per Day Emissions, Unmitigated

Pollutant	Demolition Emissions	Paving Emissions
ROC	6.65	12.72
NO_X	86.62	89.14
CO	0.00	0.00
PM_{10}	12.73	13.09
SO_X	9.83	7.53

Source: URBEMIS 2001

The applicable mitigation measures include watering of the project site a minimum of twice daily, watering of any unpaved haul routes three times per day, reducing vehicle speed on unpaved routes to 15 miles per hour or less, and proper maintenance of equipment. The amounts of emissions following implementation of these measures are shown in *Table 7.19*.

Table 7.19
Phase F Pounds Per Day Emissions, Mitigated

Pollutant	Demolition Emissions	Paving Emissions
ROC	6.32	12.33
NO_X	82.29	84.83
CO	0.00	0.00
PM_{10}	10.60	9.17
SO_X	9.34	7.16

Source: URBEMIS 2001

Implementation of the above listed mitigation measures provide small reductions in emissions, but NO_X emissions remain 0.29 pounds per day above the **APCD Significance Thresholds** during demolition and 2.83 pounds per day above the **APCD Significance Thresholds** during paving. The NO_X emissions represent a significant short-term impact of the proposed project.

Additional mitigation measures have been included in this EIR to reduce all emissions as much as feasible.

Phase G

Phase G consists of transferring of employees within DeWitt Center. No air quality impacts are anticipated as a result of these transfers.

Phase H

Transfers occurring during Phase G will vacate Buildings 204B, 205B, 206B, and 207A&B, which are proposed for demolition in Phase H. This phase is expected to occur between October 2006 and January 2007 and includes demolition of ±22,900 square feet of buildings. Demolition sites will be revegetated and/or covered following demolition, pursuant to *Mitigation Measure 7.1b*. This will limit wind blown dust emissions from the sites.

The results of the URBEMIS 2001 modeling for Phase H are shown in *Table 7.20*. The values in this table represent the unmitigated emissions. As in Phase F, NO_X emissions in Phase H exceed the **APCD Significance Thresholds**, while emissions of SO_X exceed the Placer County APCD thresholds for implementation of mitigation measures.

Table 7.20
Phase H Pounds Per Day Emissions, Unmitigated

Pollutant	*Demolition Emissions*
ROC	8.27
NO_X	116.26
CO	0.00
PM_{10}	19.75
SO_X	13.59

Source: URBEMIS 2001

The construction mitigation measures applicable to Phase H are the same as in Phase F. The amounts of emissions following implementation of these measures are shown in *Table 7.21*.

Table 7.21
Phase H Pounds Per Day Emissions, Mitigated

Pollutant	*Demolition Emissions*
ROC	7.86
NO_X	110.45
CO	0.00
PM_{10}	15.70
SO_X	12.91

Source: URBEMIS 2001

Implementation of the above listed mitigation measures provide small reductions in emissions of NO_X and SO_X, but NO_X emissions remain 28.45 pounds per day above the **APCD Significance Thresholds** and SO_X emissions remain above the thresholds for implementation of mitigation measures. The NO_X emissions represent a significant short-term impact of the proposed project. The SO_X emissions do not represent a significant impact on air quality. Additional mitigation measures have been included in this EIR to reduce all emissions as much as feasible.

Phase I

Phase I consists of transferring of employees within DeWitt Center and to the South Placer Justice Center. No air quality impacts are anticipated as a result of these transfers.

Phase J

Transfers occurring during Phase I will vacate Buildings 212A&B through 217A&B, which are proposed for demolition in Phase J. This phase is scheduled for December 2007 through March 2008 and includes demolition of ±50,500 square feet of buildings. As above, demolition sites will be revegetated and/or covered following demolition, pursuant to *Mitigation Measure 7.1b*. This will limit wind blown dust emissions from the sites.

The unmitigated emissions for Phase J as calculated by URBEMIS 2001 are shown in *Table 7.22*. As in Phases F and H, NO_X emissions in Phase J exceed the **APCD Significance Thresholds**, while emissions of ROC and SO_X exceed the Placer County APCD thresholds for implementation of mitigation measures.

Table 7.22
Phase J Pounds Per Day Emissions, Unmitigated

Pollutant	*Demolition Emissions*
ROC	10.43
NO_X	119.94
CO	0.00
PM_{10}	24.08
SO_X	13.59

Source: URBEMIS 2001

The construction mitigation measures applicable to Phase J are the same as above — watering of the project site a minimum of twice daily, watering of any unpaved haul routes three times per day, reducing vehicle speed on unpaved routes to 15 miles per hour or less, and proper maintenance of equipment. The amounts of emissions following implementation of these measures are shown in *Table 7.23*.

Table 7.23
Phase J Pounds Per Day Emissions, Mitigated

Pollutant	Demolition Emissions
ROC	9.91
NO_X	113.95
CO	0.00
PM_{10}	19.87
SO_X	12.91

Source: URBEMIS 2001

Implementation of the above listed mitigation measures provide small reductions in emissions of ROC, NO_X, and SO_X, but the NO_X emissions remain 31.95 pounds per day above the **APCD Significance Thresholds** and the SO_X emissions remain above the thresholds for implementation of mitigation measures. The NO_X emissions represent a significant short-term impact of the proposed project. Additional mitigation measures have been included in this EIR to reduce all emissions.

Aggregate Emissions by Project Year

Phases B, C, and D have substantial overlap in construction timing. The previous analyses considered construction emissions separately for each phase. *Table 7.24* considers the combined emissions for each project year in which project phases overlap. While Phase A is scheduled to occur during year 2004, Phase A activities do not overlap Phases B, C, and D. Therefore Phase A is excluded from *Table 7.24*. Year 2004 includes all of Phase B, construction of the AJC and excavation of the detention basin (Phase C), and rough grading and paving at the CES and WC sites (Phase D). Year 2005 includes paving at the AJC and construction of the CES and WC facilities. Phases F and H occur in Year 2006 but do not overlap, and therefore are not included in *Table 7.24*.

Table 7.24
Aggregate Mitigated Pounds Per Day Emissions by Project Year

Pollutant	Emissions	
	2004	2005
ROC	39.38	19.63
NO_X	285.68	170.77
CO	1.19	0.67
PM_{10}	33.32	18.54
SO_X	30.08	18.19

Source: URBEMIS 2001

Emissions of NO_X in years 2004 and 2005 exceed the **APCD Significance Threshold**. This is a significant impact of the proposed project. *Mitigation Measures 7.1a* through *7.1h* will minimize NO_X emissions to the extent feasible. It is likely that emissions of NO_X throughout the construction schedule will, especially in year 2004, still exceed the **APCD Significance**

Thresholds. This is a significant and unavoidable impact of the proposed project. Emissions of all other pollutants do not exceed the **APCD Significance Thresholds**, but ROC and SO_X emissions do exceed the APCD thresholds for implementation of mitigation measures in both 2004 and 2005. While these emission levels do not represent a significant project impact, mitigation measures have been provided to minimize all emissions.

Impact 7.2: Exposure of Sensitive Receptors to Substantial Pollutant Concentrations

Significance Before Mitigation:	Significant
Mitigation:	Implementation of Mitigation Measures 7.1a through 7.1j will also address Impact 7.2
Significance After Mitigation:	Significant and Unavoidable with respect to NO_X; Less than Significant with respect to other pollutants

Population groups with high sensitivity to exposure to air pollutants include children, the elderly, and people with other health issues, such as respiratory or cardiovascular disease. Sensitive receptors in the project area include the following facilities at DeWitt Center:

- Alder Grove School (Building 216A) in the eastern portion of DeWitt Center,
- Bell Garden Apartments (Buildings 9 and 10) in the northern portion of DeWitt Center (Buildings 2 and 3 will be vacated prior to occurrence of any project-generated noises, Buildings 4 and 5 are currently vacant),
- Charis Youth Center (Building 318) in the southeastern portion of DeWitt Center,
- Children's Receiving Home (Building 217) in the eastern portion of DeWitt Center,
- Components of the detention facilities: Main Jail (Building 520), minimum security (Buildings 302A, 303), and Juvenile Hall (Building 530),
- Health and Human Services department medical clinics (Buildings 108A, 117B, and 209) in the eastern portion of DeWitt Center,
- Health and Human Services department school (Building 310) in the southeastern portion of DeWitt Center,
- O'Brien Child Development Center (Building 311B) in the eastern portion of DeWitt Center,
- A shelter (Building 203A) in the center of DeWitt Center,
- Sierra Council on Alcoholism Treatment Center (Building 202) in the center of DeWitt Center,
- Sierra Vista High School (Building 203B) in the center of DeWitt Center, and
- Multi-Purpose Senior Center (Buildings 312B, 313, 314) in the eastern portion of DeWitt Center.

Offsite air pollutant-sensitive receptors in the vicinity include:

- Senior housing approximately 400 north and 900 feet northeast of the LDB site,

- Medical offices located approximately 200 feet north, 300 feet northeast, and 1,000 feet east of the LDB site,
- Rock Creek School located approximately 1,600 feet northeast of the LDB site,
- Auburn Elementary School located approximately 1,650 feet south of the AJC site,
- Convalescent housing located approximately 300 feet northwest of the LDB site,
- Residential neighborhoods on Bell Road north of DeWitt Center (at least 510 feet north of the LDB site),
- Residential neighborhoods on Atwood Road south of DeWitt Center (at least 600 feet south of the AJC site), and
- Residential neighborhood on Wilson Drive west of DeWitt Center (at least 300 feet west of the LDB site).

As discussed in Impact 7.1, some pollutant emissions associated with demolition, construction, and paving activities are expected to be significant, particularly NO_X emissions during the construction phases in years 2004 and 2005. Exposure to NO_X and to O_3, which is formed through reactions between NO_X and ROC, can result in permanent damage to lung development and function. The mitigation measures provided for Impact 7.1 will minimize pollutant emissions to the extent feasible.

7.4 MITIGATION MEASURES

Violates Any Air Quality Standard or Contribute Substantially to an Existing or Projected Air Quality Violation as a Result of Construction Emissions

Mitigation Measure 7.1a: The County shall incorporate Best Management Practices to control erosion during demolition at the Land Development Building site, during construction at the sites of the Land Development Building and Auburn Justice Center, during rough grading and installation of infrastructure at the Children's Emergency Shelter and Women's Center sites, and during project operation. A Construction Emission, Asbestos Dust, Fugitive Dust, and Erosion Control Plan shall be submitted for review and approval to the Placer County Air Pollution Control District prior to the issuance of any grading permits.

The Asbestos Dust Control portion of the Plan shall be prepared and implemented in accordance to state regulation "Asbestos Airborne Toxic Control measure for Construction, Grading, Quarrying, and Surface Mining Operations" (CCR Title 17 Section 93105). In addition, the Placer County Air Pollution Control District will require the presence of a qualified geologist or geotechnical engineer during major excavation and grading who can identify naturally occurring asbestos. If asbestos is found in concentrations greater than 5 percent, the material shall not be used as surfacing material as stated in state regulation "Asbestos Airborne Toxic Control Measure – Asbestos Containing Serpentine" (CCR Title 17 Section 93106). The material with naturally occurring asbestos in such concentrations can be reused at the site for subgrade material covered by other non–asbestos-containing material.

However, the local regulatory agency should provide approval for the reuse of this material on site.

The Construction Emission, Asbestos Dust, Fugitive Dust, and Erosion Control Plan shall include the following Best Management Practices for erosion control shall include, but may not be limited to, the following measures:

a. Control for bulk material from the exterior surfaces of equipment falling on paved public roads (track-out) including:

    1 Removing any visible track-out from a paved public road at any location where vehicles exit the work site.

    2 Installing one of the following track-out prevention measures:

        i. A gravel pad designed to clean the tires of exiting vehicles,
        ii. A tire shaker,
        iii. A wheel washer, or
        iv. Any other measure as effective as the measures listed above.

b. Keep active storage piles adequately wet or covered with tarps.

c. Control disturbed surface areas and storage piles that will remain inactive for more than seven (7) days using one or more of the following methods:

    1 Keep surfaces adequately wet,

    2 Establish and maintain surface crusting,

    3 Apply chemical dust suppressants or chemical stabilizers,

    4 Cover with tarp or vegetative cover,

    5 Install wind barriers of fifty percent porosity around three sides of a storage pile,

    6 Install wind barriers across open areas, or

    7 Any other measure as effective as the measures listed above.

d. Control for traffic on onsite unpaved roads, parking lots, and staging areas including:

    1 Limiting maximum vehicle speed to fifteen miles per hour, and

    2 One or more of the following:

        i. Water active operations sufficiently to keep the area adequately wet,
        ii. Apply chemical dust suppressants,
        iii. Maintain a gravel cover with a silt content that is less than five percent and asbestos content that is less than 0.25 percent to a depth of 3 inches on the surface being used for travel, or
        iv. Any other measure as effective as the measures listed above.

e. Control for earthmoving activities including one or more of the following:

    1 Pre-wet the ground to the depth of anticipated cuts,

2 Suspend grading operations when wind speeds are high enough to result in dust emissions crossing the property line,

3 Apply water prior to any land clearing,

4 Any other measure as effective as the measures listed above

f. Control for offsite transport of excavated material, if needed, including:

1 Maintaining trucks such that no spillage can occur from holes or other openings

2 Adequately wetting loads and either:

i. Covering with tarps; or
ii. Loading such that material does not touch the front, back, or sides of the cargo compartment at any point less than 6 inches from the top and that no point of the load extends above the top of the cargo compartment.

g. Post construction stabilization of disturbed areas using one or more of the following methods:

1 Establish vegetative cover

2 Paving

3 Mulching or other ground cover

h. Other measures deemed sufficient to prevent wind speeds of 10 miles per hour or greater from causing visible dust emissions.

i. Construction contracts shall require contractors to:

1 water all exposed surfaces three times per day,

2 suspend or restrict construction activities during periods of high winds (25 miles per hour gusts or stronger),

3 suspend or restrict construction activities during Spare the Air days, and

4 Time grading activities to minimize the amount of exposed areas during the wet season.

5 Maintain construction equipment according to manufacturer's recommendations.

6 Use a vehicle inventory in which at least 20% of the heavy-duty off-road equipment is be powered by CARB-certified off-road engines, as follows:

175 hp – 750 hp	1996 and newer engines
100 hp – 174 hp	1997 and newer engines
50 hp – 99 hp	1998 and newer engines

j. Open burning of vegetation removed for site preparation, construction activities, or infrastructure improvements shall not occur. Vegetative material shall be chipped, stockpiled onsite, or delivered to waste-to-energy facilities.

k. The final landscaping plans for the Auburn Justice Center shall include landscaping treatment for the cut and fill banks to minimize soil erosion in these areas. Landscaping materials shall include drought-tolerant ground cover as well as a variety of trees and shrubs. Areas where planting or hydroseeding does not occur shall be covered with a mulch type of material, such as wood chips, or an inorganic ground cover such as rock or gravel.

Mitigation Measure 7.1b: Implement *Mitigation Measure 5.2a,* which requires revegetation and/or covering of demolition sites to minimize erosion and wind blown dust emissions.

Mitigation Measure 7.1c: Implement *Mitigation Measure 5.2b,* which requires tree planting in parking lots to attain 50% shading of parking areas within 15 years of building permit issuance.

Mitigation Measure 7.1d: The following construction management techniques shall be implemented where feasible:

a. Extend the construction and/or demolition period outside of the ozone period of May through October, with the permission of the Placer County Building Department;

b. Minimize length of time construction equipment is left idling; and

c. Reduce the hours of construction and/or demolition.

Mitigation Measure 7.1e: Low-emission stationary construction equipment shall be used onsite where feasible. Existing power sources or clean fuel generators shall be used instead of temporary power generators, where feasible. In order to operate a temporary mobile power generator in excess of 50kW output, a permit shall be obtained from the Placer County Air Pollution Control District.

Mitigation Measure 7.1f: The prime contractor shall submit to the Placer County Air Pollution Control District a comprehensive inventory (i.e., make, model, year, emissions rating) of all the heavy-duty off-road equipment (50 horsepower or greater) that will be used an aggregate of 40 or more hours for each individual demolition and construction project. District personnel, with assistance from the California Air Resources Board, will conduct initial Visible Emissions Evaluation of all heavy-duty equipment on the inventory list.

Mitigation Measure 7.1g: An enforcement plan shall be established by the Placer County Air Pollution Control District for weekly evaluations of project-related on- and off-road heavy-duty vehicle engine emission opacities, using standards as defined in California Code of Regulations, Title 13, Sections 2180 – 2194. An Environmental Coordinator, CARB-certified to perform Visible Emissions Evaluations, shall routinely evaluate project related off-road and heavy-duty on-road equipment emissions for compliance with this requirement. Operators of vehicles and equipment found to exceed opacity limits will be notified and the equipment must be repaired within 72 hours.

Mitigation Measure 7.1h: Construction equipment exhaust emissions shall not exceed Air Pollution Control District Rule 202 Visible Emission limitations.

Mitigation Measure 7.1i: Implement *Mitigation Measure 5.1c*, which requires planting of trees to replace mature trees impacted by the proposed project.

Mitigation Measure 7.1j: The project shall implement a mitigation program to reduce its contribution to significant cumulative air quality impacts occurring within Placer County. The project may develop its own mitigation program, subject to approval by the Placer County Air Pollution Control District, or the project can contribute an equal amount of funds into the District's offsite mitigation program. This would allow the District to reduce regional ozone precursor emissions by providing funding for the District to implement measures to reduce emissions from sources of air pollution not required by law to reduce their emissions. The required financial contribution will be calculated by the District based on the emission estimates in this EIR. The overall goal of the mitigation program is to allow reductions equivalent to 40% of the emissions generated by the proposed project. This may be accomplished through onsite mitigation measures, offsite mitigation measures, or a combination of both.

Exposure of Sensitive Receptors to Substantial Pollutant Concentrations

No additional mitigation measures are needed. This impact will be mitigated through implementation of Mitigation Measures 7.1a through 7.1j.

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CHAPTER 8

NOISE

CHAPTER 8 NOISE

This section describes the existing noise environment in and around the DeWitt Center Study Area and how it may be affected by the construction, demolition, and operation of the proposed project. Receptors that may be affected by noise are identified, as well as the criteria used to evaluate the compatibility of noise at those receptors. The following discussion describes the fundamentals of acoustics, the results of a site reconnaissance, sound level measurements, acoustical calculations, and assessment of potential noise impacts from construction and facility operations. Where appropriate, mitigation measures are proposed to reduce potential project-related noise impacts to acceptable levels.

8.1 SETTING

Fundamentals of Acoustics

Noise is generally defined as loud, unpleasant, unexpected, or undesired sound that disrupts or interferes with normal human activities. Although exposure to high noise levels over an extended period has been demonstrated to cause hearing loss, the principal human response to environmental noise is annoyance. The response of individuals to similar noise events is diverse and influenced by the type of noise, the perceived importance of the noise, its appropriateness in the setting, the time of day, the type of activity during which the noise occurs, and the sensitivity of the individual.

Sound is a physical phenomenon consisting of minute vibrations, which travel through a medium, such as air, and are sensed by the human ear. Sound is generally characterized by a number of variables including frequency and intensity. Frequency describes the sound's pitch and is measured in Hertz (Hz), while intensity describes the sound's loudness and is measured in decibels (dB). Decibels are measured using a logarithmic scale. A sound level of 0 dB is approximately the threshold of human hearing and is barely audible under extremely quiet listening conditions. Normal speech has a sound level of approximately 60 dB. Sound levels above approximately 120 dB begin to be felt inside the human ear as discomfort and eventually pain at still higher levels. The minimum change in the sound level of individual events that an average human ear can detect is approximately 3 dB. An increase (or decrease) in sound level of approximately 10 dB is usually perceived by the average person as a doubling (or halving) of the sound's loudness, this relation holds true for loud sounds and for quieter sounds.

Because of the logarithmic nature of the decibel unit, sound levels cannot be added or subtracted directly and are somewhat cumbersome to handle mathematically. However, some simple rules of thumb are useful in dealing with sound levels. First, if a sound's intensity is doubled, the sound level increases by 3 dB, regardless of the initial sound level. Thus, for example:

$$60 \text{ dB} + 60 \text{ dB} = 63 \text{ dB, and}$$

$$80 \text{ dB} + 80 \text{ dB} = 83 \text{ dB}$$

Hertz is a measure of how many times each second the crest of a sound pressure wave passes a fixed point. For example, when a drummer beats a drum, the skin of the drum vibrates a number of times per second. A particular tone that makes the drum vibrate 100 times per second generates a sound pressure wave that is oscillating at 100 Hz; this pressure oscillation is

perceived as a tonal pitch of 100 Hz. Sound frequencies between 20 Hz and 20,000 Hz are within the range of sensitivity of the best human ear.

Sound from a tuning fork (a pure tone) contains a single frequency. In contrast, most sounds one hears in the environment do not consist of a single frequency, but rather a broad band of frequencies differing in sound level. The method commonly used to quantify environmental sounds consists of evaluating all of the frequencies of a sound according to a weighting system that reflects the fact that human hearing is less sensitive at low frequencies and extremely high frequencies than at the mid-range frequencies. This is called "A" weighting, and the decibel level measured is called the A-weighted sound level (dBA). In practice, the level of a noise source is conveniently measured using a sound level meter that includes a filter corresponding to the dBA curve. Noise levels at a given location are typically measured over two one-hour periods, once during the day and once during the evening or night.

Although the A-weighted sound level may adequately indicate the level of environmental noise at any instant in time, community noise levels vary continuously. Most environmental noise includes a conglomeration of noise from several sources that creates a relatively steady background noise in which no particular source is identifiable. A single descriptor called the equivalent sound level (L_{eq}) is used. L_{eq} is the mean A-weighted sound level during a measured time interval. It is the "equivalent" constant sound level that would have to be produced by a given source to equal the fluctuating level measured. In addition, it is often desirable to know the acoustic range of the noise source being measured. This is accomplished through the L_{max} and L_{min} indicators. They represent the RMS (or root-mean-square) maximum and minimum obtainable noise levels during the monitoring interval. The L_{min} value obtained for a particular monitoring location is often called the *acoustic floor* for that location.

To describe the time-varying character of environmental noise, the statistical noise descriptors L_{10}, L_{50}, and L_{90} are commonly used. They are the noise levels equaled or exceeded during 10 percent, 50 percent, and 90 percent of a stated time. Sound levels associated with the L_{10} typically describe transient or short-term events, while levels associated with the L_{90} describe the steady-state (or most prevalent) noise conditions.

Another sound measure known as the Day-Night Average Noise Level (L_{dn}) is defined as the A-weighted average sound level for a 24-hour day. It is calculated by adding a 10 dBA penalty to sound levels in the night (10:00 p.m. to 7:00 a.m.) to compensate for the increased sensitivity to noise during the quieter evening and nighttime hours. The L_{dn} is used by agencies such as the U.S. Department of Housing and Urban Development (HUD), the State of California, the City of Auburn, and Placer County to define acceptable land use compatibility with respect to noise. Sound levels of typical noise sources and environments are provided in *Table 8.1* to provide a frame of reference.

Table 8.1
Sound Levels of Typical Noise Sources and Noise Environments
(A-Weighted Sound Levels)

Example Noise Source (at a Given Distance)	Scale of A-Weighted Sound Level in Decibels	Example Noise Environment	Human Judgment of Noise Loudness (Relative to a Reference Loudness of 70 Decibels*)
Military Jet Take-off with After-burner (50 ft)	140	Carrier Flight Deck	
Civil Defense Siren (100 ft)	130		
Commercial Jet Take-off (200 ft)	120		Threshold of Pain
			*32 times as loud
Pile Driver (50 ft)	110	Rock Music Concert	*16 times as loud
Ambulance Siren (100 ft)	100		Very Loud
Newspaper Press (5 ft)			*8 times as loud
Power Lawn Mower (3 ft)			
Motorcycle (25 ft)	90	Boiler Room	*4 times as loud
Propeller Plane Flyover (1,000 ft)		Printing Press Plant	
Diesel Truck, 40 mph (50 ft)			
Garbage Disposal (3 ft)	80	High Urban Ambient Sound	*2 times as loud
Passenger Car, 65 mph (25 ft)			Moderately Loud
Living Room Stereo (15 ft)			*70 decibels
Vacuum Cleaner (3 ft)	70		(Reference Loudness)
Electronic Typewriter (10 ft)			
Normal Conversation (5 ft)	60	Data Processing Center	*1/2 as loud
Air Conditioning Unit (100 ft)		Department Store	
Light Traffic (100 ft)	50	Private Business Office	*1/4 as loud
Bird Calls (distant)	40	Lower Limit of Urban	Quiet
		Ambient Sound	*1/8 as loud
Soft Whisper (5 ft)	30	Quiet Bedroom	
	20	Recording Studio	Just Audible
	10		Threshold of Hearing

Source: Compiled by URS Corporation

Noise Environment

Some land uses are considered sensitive to noise. Noise-sensitive receptors are land uses associated with indoor and outdoor activities that may be subject to stress or significant interference from noise. They often include residential dwellings, mobile homes, hotels, motels, hospitals, nursing homes, educational facilities, and libraries. In addition, office land uses can be sensitive to noise when levels are high enough to interfere with working conditions.

Onsite Receptors

Several onsite noise-sensitive receptors have been identified that may be impacted by construction and/or demolition included in the proposed project. Day-use facilities onsite

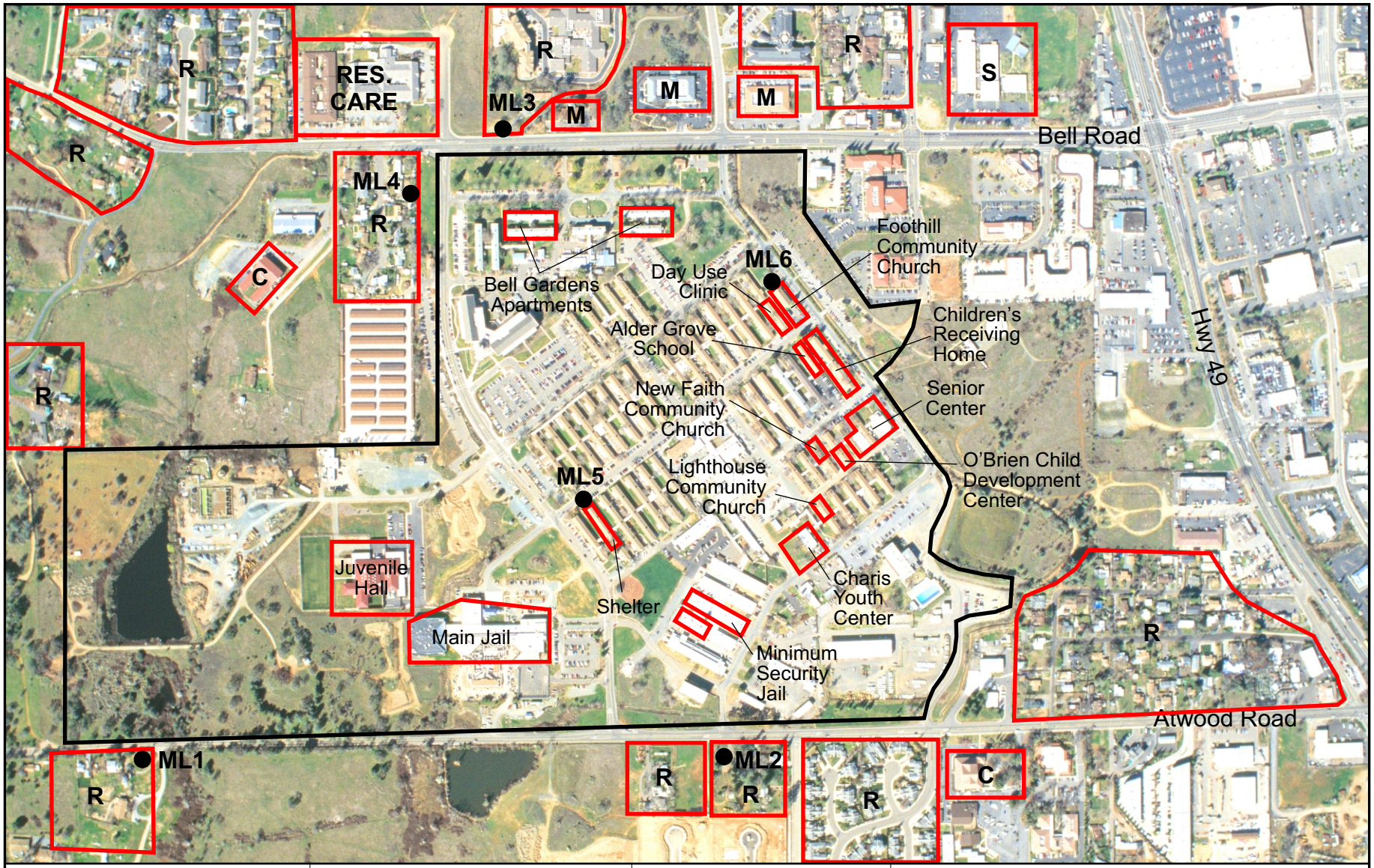
include youth and recreation centers, senior center, churches, medical clinics, and schools. Day- and night-use onsite facilities include apartments, three residential shelters (including the alcoholism treatment center), and the residential areas within the detention facilities (Juvenile Hall, Main Jail, minimum security). These receptors are depicted on *Figure 8-1*, and include the following:

- Alder Grove School (Building 216A) in the eastern portion of DeWitt Center,
- Bell Garden Apartments (Buildings 9 and 10) in the northern portion of DeWitt Center (Buildings 2 and 3 will be vacated prior to occurrence of any project-generated noises, Buildings 4 and 5 are currently vacant),
- Charis Youth Center (Building 318) in the southeastern portion of DeWitt Center,
- Children's Receiving Home (Building 217) in the eastern portion of DeWitt Center,
- Components of the detention facilities: Main Jail (Building 520), minimum security (Buildings 302A, 303), and Juvenile Hall (Building 530),
- Foothill Community Church (Building 118) in the eastern portion of DeWitt Center,
- Health and Human Services department medical clinics (Buildings 108A, 117B, and 209) in the eastern portion of DeWitt Center,
- Health and Human Services department school (Building 310) in the southeastern portion of DeWitt Center,
- Lighthouse Baptist Church (Building 320A) in the southeastern portion of DeWitt Center,
- New Faith Community Church (Building 310A) in the eastern portion of DeWitt Center,
- O'Brien Child Development Center (Building 311B) in the eastern portion of DeWitt Center,
- A shelter (Building 203A) in the center of DeWitt Center,
- Sierra Council on Alcoholism Treatment Center (Building 202B) in the center of DeWitt Center,
- Sierra Vista School (Building 203B) in the center of DeWitt Center, and
- Multi-Purpose Senior Center (Buildings 312B, 313, 314) in the eastern portion of DeWitt Center.

Offsite Receptors

Several offsite noise-sensitive receptors have also been identified. These receptors are depicted on *Figure 8-1*, and include the following:

- Senior housing approximately 400 feet north and 900 feet northeast of the LDB site,
- Medical offices located approximately 200 feet north, 300 feet northeast, and 1,000 feet east of the LDB site,
- Rock Creek School located approximately 1,600 feet northeast of the LDB site (with intervening buildings),



north fork associates

R = Residential
M = Medical
S = School
C = Church
= Sensitive Receptors
ML = Measurement Location

0 600
Approximate scale in feet

Aerial Photo Provided by Geoimagery
Photo Date: 2/28/02

Figure 8-1

NOISE ANALYSIS MAP

DeWitt Government Center Facility Plan (2003 - 2010)

Placer County, California

- Auburn Elementary School located approximately 1,650 feet south of the AJC site (with intervening buildings),
- Convalescent housing located approximately 300 feet northwest of the LDB site,
- Sonrise Church located approximately 650 feet west of the LDB site,
- Residential neighborhoods on Bell Road north of DeWitt Center (at least 510 feet north of the LDB site),
- Residential neighborhoods on Atwood Road south of DeWitt Center (at least 600 feet south of the AJC site),
- Residential neighborhood on Wilson Drive west of DeWitt Center (at least 300 feet west of the LDB site).

Sound Level Measurements

To quantify the existing noise environment near the proposed project area, a series of sound level measurements was taken on April 17 and 18, 2003, at DeWitt Center and the closest residences. Data were gathered using a Larson Davis Model 820 ANSI (American National Standards Institute) Type 1 Integrating Sound Level Meter. The meter was calibrated before and after each measurement period. The meter was mounted on a tripod five feet above the ground. Each measurement location was monitored for one hour during the daytime and nighttime periods. The L_{dn} was then calculated for each site using the hourly L_{eq} values.

Six one-hour sound level measurements were taken at onsite and offsite sensitive receptors to quantify the ambient noise environment. The results of the measurements and simultaneous traffic counts are summarized in *Table 8.2* and correspond to the measurement locations depicted in *Figure 8-1*. Details for each measurement location are described below.

ML1 Measurements were taken at the corner of the north and east property lines of 10810 Atwood Road on April 17 between 2:30 and 3:30 p.m. (daytime hour) and on April 18 between 11:02 p.m. and 12:02 a.m. (nighttime hour). The location is a single-family residence with an adjoining childcare center (Bell's Child Care Center). The measurement was taken 50 feet from the centerline of Atwood Road. The residence is bound by open space on the north and east and residences to the south and west. Simultaneous counts of vehicles on Atwood Road were taken during both measurement periods. Daytime noise sources consisted of vehicular traffic on Atwood Road, aircraft overflights, children playing at the day care center, and birds vocalizing. Nighttime noise sources consisted of vehicular traffic on Atwood Road, aircraft overflights, distant train, dogs barking, and frogs and crickets vocalizing. The daytime L_{eq} was 61.0 dBA, the nighttime L_{eq} was 54.9 dBA, and the calculated L_{dn} was 63 dBA.

ML2 Measurements were taken at the corner of the north and west property lines of 11480 Atwood Road on April 17 between 3:33 and 4:33 p.m. (daytime hour) and 10:00 and 11:00 p.m. (nighttime hour). The location is a single-family residence bound by residential neighborhoods to the south, east, and west,

Table 8.2
Sound Level Measurements (dBA)

Measurement Identification	Location	Time	Sound Level Measurements						Traffic Counts		
			L_{eq}	L_{max}	L_{min}	L_{10}	L_{50}	L_{90}	Autos	Medium Trucks	Heavy Trucks
ML1	10810 Atwood Road	2:30 – 3:30 p.m.	61.0	78.4	32.6	66.4	48.4	37.8	223	1	0
		11:02 p.m. – 12:02 a.m.	54.9	76.4	37.9	54.1	44.3	38.3	18	0	0
ML2	11480 Atwood Road	3:33 – 4:33 p.m.	65.3	83.2	44.0	69.3	60.6	51.4	375	0	0
		10:00 – 11:00 p.m.	55.6	78.0	33.1	54.9	43.9	40.5	26	0	0
ML3	3342 Bell Road	4:35 – 5:35 p.m.	64.8	79.9	39.9	69.4	60.3	47.5	403	3	0
		3:11 – 4:11 a.m.	47.2	71.5	37.7	43.9	39.8	38.6	3	0	0
ML4	Rear Yard of Residence on Wilson Drive facing Richardson Drive	8:00 – 9:00 a.m.	61.0	78.7	40.4	64.9	55.6	47.3	101	1	3
		2:10 – 3:10 a.m.	42.4	58.7	36.8	43.8	39.9	38.3	3	0	0
ML5	Alcoholism treatment center facing C Avenue	9:05 – 10:05 a.m.	54.0	73.5	40.4	54.6	45.5	43.0	15	0	0
		12:00 – 1:00 a.m.	49.3	67.6	37.2	50.0	44.5	42.3	4	0	0
ML6	Foothill Community Church facing First Street	10:10 – 11:10 a.m.	59.8	47.8	40.1	63.4	54.3	46.1	69	4	2
		1:05 – 2:05 a.m.	47.2	65.0	39.5	48.1	44.4	42.0	4	0	0

Measurements taken on April 17 and 18, 2003

and the existing DeWitt Center to the north (across Atwood Road). The measurement was taken 50 feet from the centerline of Atwood Road. Simultaneous counts of vehicles on Atwood Road were conducted during both measurement periods. Daytime noise sources consisted of vehicular traffic on Atwood Road and F Street, noise from the existing operations of DeWitt Center, aircraft overflights, and birds vocalizing. Nighttime noise sources consisted of vehicular traffic on Atwood Road, dogs barking, and frogs and crickets vocalizing. The daytime L_{eq} was 65.3 dBA, the nighttime L_{eq} was 55.6 dBA, and the calculated L_{dn} was 65 dBA.

ML3 Measurements were taken at the corner of the south and west property lines of 3342 Bell Road on April 17 between 4:35 and 5:35 p.m. (daytime hour) and on April 18 between 3:11 and 4:11 a.m. (nighttime hour). The location is a single-family residence bound by medical offices to the east and west, apartments to the north, and the existing DeWitt Center to the south (across Bell Road). The measurement was taken 50 feet from the centerline of Bell Road. Simultaneous counts of vehicles on Bell Road were conducted during both measurement periods. Daytime noise sources consisted of vehicular traffic on Bell Road and Richardson Drive, noise from the existing operations of DeWitt Center, aircraft overflights, and birds vocalizing. Nighttime noise sources consisted of vehicular traffic on Bell Road and frogs and crickets vocalizing. The daytime L_{eq} was 64.8 dBA, the nighttime L_{eq} was 47.2 dBA, and the calculated L_{dn} was 63 dBA.

ML4 Measurements were taken near the east property line (rear yard) of a residence on Wilson Drive on April 18 between 8:00 and 9:00 a.m. (daytime hour) and 2:10 and 3:10 a.m. (nighttime hour). The location is a single-family residence bound by residences to the north, south, and west and the existing DeWitt Center to the east. The measurement was taken 150 feet from the centerline of Richardson Drive. Simultaneous counts of vehicles on Richardson Drive were conducted during both measurement periods. Daytime noise sources consisted of vehicular traffic on Richardson Drive and Bell Road, noise from the existing operations of DeWitt Center, aircraft overflights, people talking as they walked on the sidewalks, distant leaf blower, and birds vocalizing. Nighttime noise sources consisted of vehicular traffic on Richardson Drive and Bell Road, distant traffic on Highway 49, and frogs and crickets vocalizing. The daytime L_{eq} was 61.0 dBA, the nighttime L_{eq} was 42.4 dBA, and the calculated L_{dn} was 59 dBA.

ML5 Measurements were taken at the front entrance of a shelter on the DeWitt Center property on April 18 between 9:05 and 10:05 a.m. (daytime hour) and 12:00 and 1:00 a.m. (nighttime hour). The location is a barracks-style building bound by various DeWitt Center offices on all sides. Simultaneous counts of vehicles on C Avenue were conducted during both measurement periods. Daytime noise sources consisted of vehicular traffic on C Avenue and Richardson Drive, noise from the existing operations of DeWitt Center, aircraft overflights, people talking, and birds vocalizing. Nighttime noise sources

consisted of vehicular traffic on C Avenue and Richardson Drive, distant dogs barking, and frogs and crickets vocalizing. The daytime L_{eq} was 54.0 dBA, the nighttime L_{eq} was 49.3 dBA, and the calculated L_{dn} was 57 dBA.

ML6 Measurements were taken at the front entrance of the Foothill Community Church (Building 118) on the east side of DeWitt Center on April 18 between 10:10 and 11:10 a.m. (daytime hour) and 1:05 and 2:05 a.m. (nighttime hour). The location is a church building bound by various DeWitt Center offices on the south and west and parking lots to the north and east. Simultaneous counts of vehicles on First Street were conducted during both measurement periods. Daytime noise sources consisted of vehicular traffic on First Street, distant traffic on Bell Road and Highway 49, noise from the existing operations of DeWitt Center, aircraft overflights, people talking, and birds vocalizing. Nighttime noise sources consisted of vehicular traffic on First Street, distant traffic on Highway 49, and crickets vocalizing. The daytime L_{eq} was 59.8 dBA, the nighttime L_{eq} was 47.2 dBA, and the calculated L_{dn} was 59 dBA.

8.2 REGULATORY FRAMEWORK

Auburn/Bowman Community Plan

The *Auburn/Bowman Community Plan* contains policies governing noise related to development within the communities of Auburn and Bowman. The *Auburn/Bowman Community Plan* does not specifically address noise generated during construction activities.

Goal III.F.2.a. To protect community plan area residents from the harmful and annoying effects of exposure to excessive noise.

Goal III.F.2.b. To preserve the rural noise environment of the community plan area and surrounding areas.

Goal III.F.2.c. To protect the economic base of the community plan area by preventing incompatible land uses from encroaching upon existing or planned noise-producing uses.

Goal III.F.2.d. To encourage the application of state of the art land use planning methodologies in areas of potential noise conflicts.

III.F.3.a New development of noise-sensitive uses shall not be allowed where the noise level due to non-transportation noise sources will exceed the noise level standards of Table 14 as measured immediately within the property line of new development, unless effective noise mitigation measures have been incorporated into the development design to achieve the standards specified in Table 14.

III.F.3.b Noise created by new non-transportation noise sources shall be mitigated so as not to exceed the noise level standards of Table 14 as measured immediately within the property line of lands designated for noise-sensitive uses.

III.F.3.d The feasibility of proposed projects with respect to existing and future transportation noise levels shall be evaluated by comparison to Table 16.

Table 8.3
Noise Level Performance Standards for New Projects Affected by or Including Non-Transportation Sources *(Table 14 of the Auburn/Bowman Community Plan)*

Noise Level Descriptor	Daytime (7 a.m. to 10 p.m.)	Nighttime (10 p.m. to 7 a.m.)
Hourly L_{eq}, dB	50	45
Maximum Level, dB	70	65

Note: Each of the noise levels specified above shall be lowered by five dB for simple tone noises, noises consisting primarily or speech or music, or for recurring impulsive noises. These noise level standards do not apply to residential units established in conjunction with industrial or commercial uses (e.g., caretaker dwelling).
Source: Auburn/Bowman Community Plan: Community Development Element

III.F.3.e New development of noise-sensitive land uses will not be permitted in areas exposed to existing or projected levels of noise from transportation noise sources which exceed the levels specified in Table 16, unless the project design includes effective mitigation measures to reduce noise in outdoor activity areas and interior spaces to the level specified in Table 16.

III.F.3.f Noise created by new transportation noise sources, including roadway improvement projects, shall be mitigated so as not to exceed the levels as specified in Table 16 at outdoor activity areas or interior spaces of existing noise-sensitive land uses in either the incorporated or unincorporated areas.

III.F.3.h Where noise mitigation measures are required to achieve the standards of Tables 14 and 16, the emphasis of such measures shall be placed upon site planning and project design. The use of noise barriers shall be considered a means of achieving the noise standards only after all other practical design-related noise mitigation measures have been integrated into the project.

Table 8.4
Maximum Allowable Noise Exposure for Transportation Noise Sources *(Table 16 of the Auburn/Bowman Community Plan)*

Land Use	Outdoor Activity Areas[1] (L_{dn}/CNEL, dB)
Residential	60[2]
Transient Lodging	60[2]
Theaters, Auditoriums, Music Halls	60[2]
Churches, Meeting Halls	--
Office Buildings	60[2]
Schools, Libraries, Museums	--
Playgrounds, Neighborhood Parks	70

1. *Where the location of outdoor activity areas is unknown, the exterior noise level standard shall be applied to the property line of the receiving land use.*
2. *Where it is not possible to reduce noise in outdoor activity areas to 60 dB Ldn/CNEL or less using a practical application of the best-available noise reduction measures, an exterior noise level of up to 65 Ldn/CNEL may be allowed provided that available exterior noise level reduction measures have been implemented and interior noise levels are in compliance with this table. For properties affected by transportation noise from I-80 or railroad tracks, this maximum level shall be 70 Ldn/CNEL, provided that interior levels are in compliance with this table.*

Source: Auburn/Bowman Community Plan: Community Development Element

Placer County General Plan

The *Placer County General Plan* contains policies governing noise related to development within Placer County (1994). The maximum allowable noise exposure limits for transportation noise sources are summarized in *Table 8.5,* which is Table 9-1 of the *Placer County General Plan.* The Noise Element of the *Placer County General Plan* does not specifically address construction noise level limits. Furthermore, the Placer County Code does not contain an explicit Noise Ordinance. However, the Placer County Board of Supervisors has issued a Minute Order that controls construction noise by limiting the hours of operation to the daytime hours of 6 a.m. to 8 p.m. Monday through Friday and 8 a.m. to 6 p.m. Saturday. This order also requires proper maintenance of equipment mufflers and the indication of the equipment staging area on improvement plans. General Plan policies applicable to the proposed project are listed below.

Table 8.5
Allowable L_{dn} Noise Levels within Specified Zone Districts
Applicable to New Projects Affected by or Including Non-Transportation Sources

Zone District of Receptor	*Property Line of Receiving Use*	*Interior Spaces*
Residential adjacent to Industrial	60	45
Other Residential	50	45
Office/Professional	70	45
Neighborhood Commercial	70	45

Source: Table 9-1 from the Noise Element of the Placer County General Plan.

Goal 9.A To protect County residents from the harmful and annoying effects of exposure to excessive noise.

9.A.1 The County shall not allow development of new noise-sensitive uses where the noise level due to non-transportation noise sources will exceed the noise level standards of Table 9-1 as measured immediately within the property line of the new development, unless effective noise mitigation measures have been incorporated into the development design to achieve the standards specified in Table 9-1.

9.A.2 The County shall require that noise created by new non-transportation noise sources be mitigated so as not to exceed the noise level standards of Table 9-1 as measured immediately within the property line of lands designated for noise-sensitive uses.

9.A.4 Impulsive noise produced by blasting should not be subject to the criteria listed in Table 9-1. Single event impulsive noise levels produced by gunshots or blasting shall not exceed a peak linear overpressure of 122 db, or a C-weighted Sound Exposure Level (SEL) of 98 dBC. The cumulative noise level from impulsive sounds such as gunshots and blasting shall not exceed 60 dB L_{Cdn} or $CNEL_C$ on any given day. These standards shall be applied at the property line of a receiving land use.

9.A.6 The feasibility of proposed projects with respect to existing and future transportation noise levels shall be evaluated by comparison to Figure 9-1.

9.A.7 The County shall purchase only new equipment and vehicles which comply with noise level performance standards based upon the best available noise reduction technology.

9.A.8 New development of noise-sensitive land uses shall not be permitted in areas exposed to existing or projected levels of noise from transportation noise sources, including airports, which exceed the levels as specified in Table 9-3, unless the project design includes effective mitigation measures to reduce noise in outdoor activity areas and interior spaces to the levels specified in Table 9-3.

9.A.9 Noise created by new transportation noise sources, including roadway improvement projects, shall be mitigated so as not to exceed the levels specified in Table 9-3 at outdoor activity areas or interior spaces of existing noise-sensitive land uses.

9.A.12 Where noise mitigation measures are required to achieve the standards of Tables 9-1 and 9-3, the emphasis of such measures shall be placed upon site planning and project design. The use of noise barriers shall be considered as a means of achieving the noise standards only after all other practical design-related noise mitigation measures have been integrated into the project.

Placer County Airport Land Use Compatibility Plan

DeWitt Center is located within the jurisdiction of the Placer County Airport Land Use Compatibility Plan, which addresses land uses surrounding airports within Placer County (2000). The Auburn Municipal Airport is located approximately 1.25 miles from DeWitt Center. The Auburn Compatibility Map designates the northeastern corner of DeWitt Center as Zone C2, and rest of DeWitt Center as Zone D. Zone C2 areas are those that experience regular overflights by aircraft approaching and departing the airport, but the overflights are not as frequent or are at higher altitude than in zones closer to the airport. Zone D areas experience less frequent overflights and at higher altitudes than overflights in Zone C2. DeWitt Center is located outside the 55 dB Community Noise Level contour (CNEL is approximately 1 dBA greater than L_{dn}), but is located within the "Airport Influence Area" as designated in the Airport Land Use Compatibility Plan.

8.3 IMPACTS

This section identifies and discusses the potential environmental impacts resulting from the proposed project, and suggests mitigation measures to reduce the levels of impact. A detailed discussion of mitigation measures is included in Section 8.4, Mitigation Measures.

Significance Criteria

Potential significant impacts associated with noise have been evaluated using the following criteria, as identified in Appendix G of the CEQA Guidelines:

- Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies,
- Exposure of persons to or generation of excessive ground-borne vibration or ground-borne noise levels,

- A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project,
- A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project,
- For a project located within an airport land use plan, or where such a plan has not been adopted, within two miles of a public airport or public use airport, exposure of people residing or working in the project to excessive noise levels, or
- For a project within the vicinity of a private airstrip, exposure of people residing or working in the project area to excessive noise levels.

Impacts Determined to be Less than Significant

Substantial Permanent Increase in Ambient Noise Levels. Noise sources as a result of implementation of the proposed facility plan would remain the same as those identified for the existing conditions, that is vehicular traffic on adjacent roadways. The California Department of Transportation (Caltrans) Sound32 Traffic Noise Prediction Model (based on FHWA RD-77-108) with California Reference Energy Mean Emissions Levels was used to calculate existing, future, and future with project traffic noise levels 50 feet from the centerline of each roadway and at identified noise sensitive receptors. The modeling effort considered estimated average vehicle speed, peak hour traffic (DKS Associates 2003), and traffic mix. For Bell Road, the posted speed limit of 35 miles per hour (mph) and a traffic mix of 98.25 percent autos, 1.5 percent medium trucks, and 0.25 percent heavy trucks were used. For Atwood Road, the posted speed limit of 35 mph and a traffic mix of 96.5 percent autos, 2.25 percent medium trucks, and 1.25 percent heavy trucks were used. For Richardson Drive, the posted speed limit of 25 mph and a traffic mix of 99 percent autos, 0.75 percent medium trucks, and 0.25 percent heavy trucks were used. For First Street, the posted speed limit of 15 mph and a traffic mix of 99.25 percent autos, 0.75 percent medium trucks, and 0 percent heavy trucks were used.

The model assumed "hard" site sound propagation conditions. Strictly speaking, a hard site propagation rule decays sound from a source to a receiver at a rate of 3.0 dB per doubling of distance from the source-receiver pair. This rule applies to the propagation of sound waves with no ground interaction or the interaction with a hard (hence the term) surface such as roadways, asphalt parking lots, or hard-packed graded lots. *Table 8.6* shows the noise levels for existing and future (Year 2020) conditions with and without the proposed project for each roadway at 50 feet and at the sensitive receptors. A review of the table shows that the project-related noise levels along the roadways would increase by less than 2.0 dBA L_{dn} under both the future (Year 2020) no project and with project conditions. Sound level variations of less than 3.0 dB are not detectable by the typical human ear. Sound levels along the roadways currently exceed the 60 dBA L_{dn} *Auburn/Bowman Community Plan* significance criteria at several locations. However, since the contribution of vehicular traffic as a result of the project is not detectable, the impact would be less than significant.

Table 8.6
Roadway Segment Calculated L_{dn} Sound Levels

Roadway	Receptor	Distance From Roadway (ft)	Existing Condition		Year 2020 No Project		Year 2020 With Project		Delta[2]
			Peak Hour Traffic[1]	Calculated Level (dBA)	Peak Hour Traffic	Calculated Level (dBA)	Peak Hour Traffic	Calculated Level (dBA)	
Atwood Road	50 feet from centerline	50	740	65	950	66	960	66	1
	ML1	50	740	65	950	66	960	66	1
	ML2	50	740	65	950	66	960	66	1
Bell Road	50 feet from centerline	50	810	65	1,240	67	1,270	67	2
	ML3	50	810	65	1,240	67	1,270	67	2
	ML4	150	810	60	1,240	62	1,270	62	2
Richardson Drive	50 feet from centerline	50	360	57	500	58	510	58	1
	ML5	75	360	54	500	55	510	56	2
First Street	50 feet from centerline	50	460	53	390	52	270	51	-2
	ML6	50	460	53	390	52	270	51	-2

1. Peak hour traffic provided by DKS Associates (2003)
2. Delta is difference between Year 2020 With Project and Existing Condition

Exposure of People Residing or Working in the Project to Excessive Noise Levels Related to Airport/Airstrip Activities. DeWitt Center is located approximately 1.25 miles from the Auburn Municipal Airport, outside the 55 dB CNEL contour, but within the "Airport Influence Area" as designated on Exhibit 4E in the Airport Land Use Compatibility Plan (Placer County Airport Land Use Commission 2000). The State of California (California Code of Regulations Title 21) and the FAA (Part 150 Regulation) consider sound levels less than 65 dB CNEL to be compatible with all land uses. Therefore, the project would not expose people residing or working in DeWitt Center to excessive noise levels from Auburn Municipal Airport. There are no private airstrips in the vicinity of DeWitt Center. This impact is considered less than significant.

Potentially Significant Impacts

Impact 8.1 A Substantial Temporary or Periodic Increase in Ambient Noise Levels that Exceed General Plan or Noise Ordinance Standards in the Project Vicinity Above Levels Existing Without the Project

Significance Before Mitigation:	Potentially Significant
Mitigation:	8.1a
Significance After Mitigation:	Less than Significant

Temporary increases in ambient noise levels are expected to occur during demolition and construction phases of the proposed project. These increases would be significant if they generate noise levels "in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies" (first significance criterion listed above). As discussed in the Regulatory Framework section, the Community Development Element of the *Auburn/Bowman Community Plan* and the Noise Element of the *Placer County General Plan* do not specifically address construction noise level limits. In the absence of County standards defining construction related sound level limits, the U.S. Environmental Protection Agency (EPA) guidelines are used in this EIR to evaluate the significance of a noise impact. The guidelines are based on a body of research. EPA research has shown that whenever intrusive noise exceeds approximately 60 dBA indoors, there will be interference with speech communication (EPA 1974), while other research has found that sound levels above 50 dBA in the interior of buildings may impair room acoustics and affect customary use of the space by disrupting and interfering with speech (Knudsen and Harris 1978). This analysis relies on the 50 dBA threshold as it is the more restrictive standard. (Additional 1974 EPA research conclusions show that a steady A-weighted background level of 60 dBA will produce 98 percent sentence intelligibility; that of 65 dBA will produce 93 percent intelligibility; that of 70 dBA will produce 66 percent intelligibility; and that of 75 dBA will produce 2 percent intelligibility.)

Buildings with windows closed typically provide a noise reduction ranging between 15 dBA and 25 dBA. The high end of this range has been used for this study given the construction type of the existing buildings, which is solid masonry and concrete. Therefore, if the exterior sound level was 75 dBA, the interior sound with the windows closed would be approximately 50 dBA. Thus, sound levels exceeding 75 dBA at the exterior of a building could result in short-term adverse impacts.

Construction/Demolition Impacts. As discussed in **CHAPTER 2, PROJECT DESCRIPTION**, construction of the proposed project would proceed in 10 phases (A through J). Noise would

result from the operation of construction and demolition equipment. The increase in noise level would be primarily experienced close to the noise source. The magnitude of the impact would depend on the type of demolition/construction activity, noise levels generated by various pieces of equipment, duration of the activity phase, and distance between the noise source and receiver. *Figure 8-2* shows average noise levels generated by individual pieces of construction equipment. Sound levels of typical construction equipment will range from approximately 65 dBA to 95 dBA at 50 feet from the source (U.S. Environmental Protection Agency [U.S. EPA], 1971). Sound levels of typical demolition equipment will range from approximately 65 dBA to 90 dBA at 50 feet from the source.

Acoustical calculations were performed using the high and low end of the typical equipment sound levels to estimate noise from construction and demolition activities at the closest receptors. Noise from the activity was assumed to have point source acoustical characteristics. Strictly speaking, a point source sound decays at a rate of 6 dB per doubling of distance from the source receiver pair. This is a logarithmic relationship describing the acoustical spreading of a pure, undisturbed spherical wave in air. The rule applies to the propagation of sound waves with no ground interaction. Office buildings in direct line-of-sight within 500 feet of construction and/or demolition may experience sound levels above 75 dBA. The following summarizes the activities, duration, types of equipment used, sensitive receptors in the direct line of sight for each phase, and estimated sound levels at the receptors.

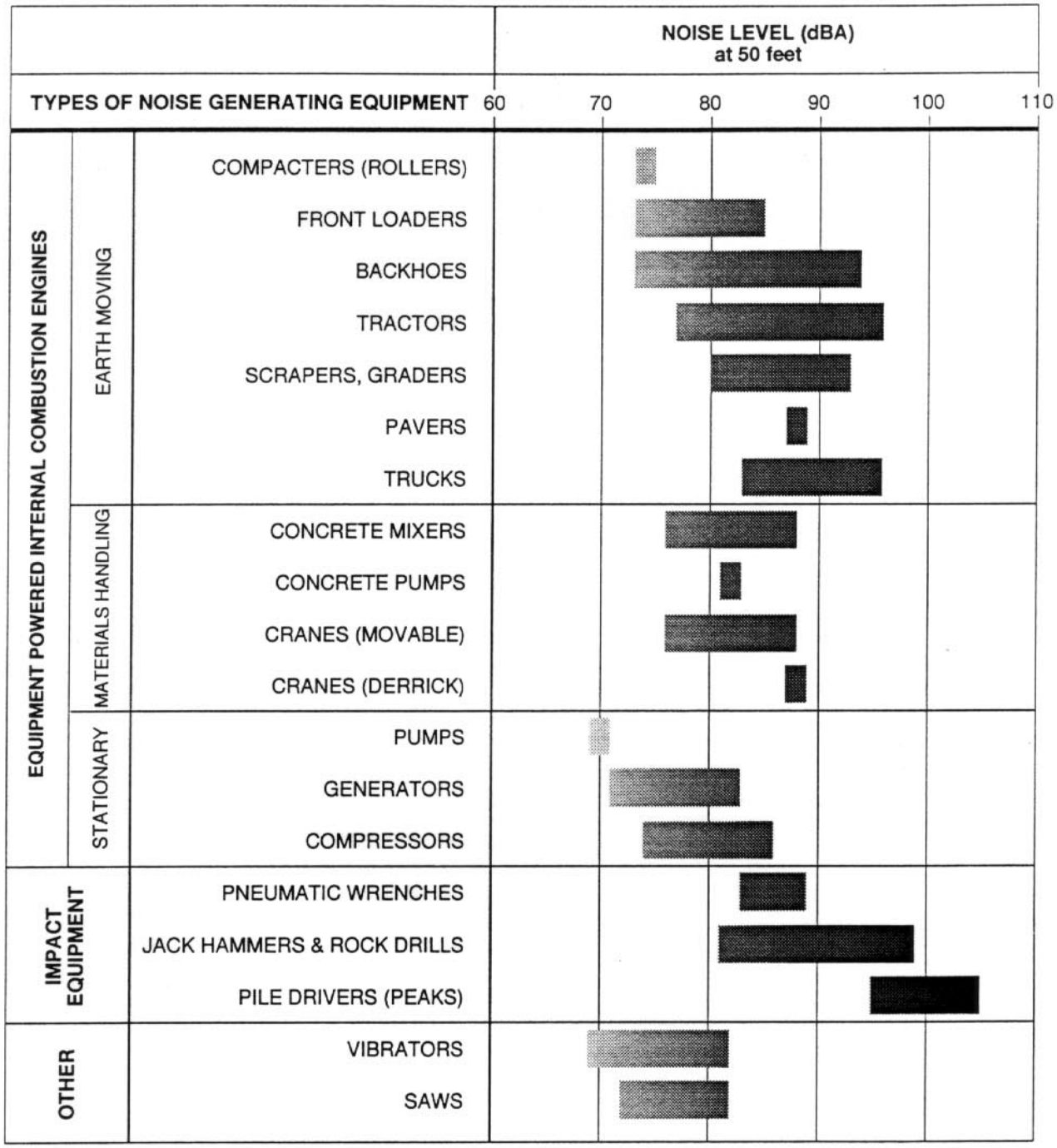
Phase A

This phase is scheduled to occur from March 2003 through April 2004 and includes three major operations.

1) The relocation of residents of Bell Gardens Buildings 2 and 3. No noise impacts are associated with this operation.
2) The demolition of the WWTP in the west portion of DeWitt Center. Potential impacts to noise-sensitive receptors during demolition include:
   - Juvenile Hall located 600 feet to the east may experience levels of 43 to 68 dBA.
   - Main Jail located 1,100 feet to the east may experience levels of 38 to 63 dBA.
   - Residences located 750 feet to the northwest may experience levels of 41 to 66 dBA.
   - Residences located 950 to the southwest may experience levels of 39 to 64 dBA.
   - Church located 800 feet to the north may experience levels of 43 to 68 dBA.

As none of these noise levels exceed 75 dBA, there are no significant impacts associated with this portion of Phase A.

3) The demolition of Buildings 2 through 5 (Bell Gardens Apartments). Potential impacts to noise-sensitive receptors during demolition include:
   - Convalescent housing located 600 feet to the northwest may experience levels of 43 to 68 dBA.



Source: URS

Figure 8-2

TYPICAL CONSTRUCTION EQUIPMENT NOISE GENERATION LEVELS

DeWitt Government Center Facility Plan (2003 - 2010)

Placer County, California

- Residences located 300 feet to the west (Buildings 9 and 10) may experience levels of 49 to 74 dBA. The intervening buildings, Buildings 1, 7, and 8, will serve to reduce these noise levels.
- Residences located 510 feet to the north may experience levels of 45 to 70 dBA.
- Medical centers located 500 feet to the north, 600 feet to the northeast, and 900 feet to the northeast may experience levels of 45 to 70 dBA, 43 to 68 dBA, and 40 to 65 dBA, respectively.
- Rock Creek School located 1,800 feet to the northeast may experience levels of 34 to 59 dBA.
- Foothill Community Church located 1,000 feet to the southeast may experience levels of 39 to 64 dBA.
- Day use clinic located 1,000 feet to the southeast may experience levels of 39 to 64 dBA.

As none of these noise levels exceed 75 dBA, there are no significant impacts associated with this portion of Phase A. Thus, there are no significant noise impacts in Phase A.

Phase B

Construction of the Land Development Building (LDB). Phase B is scheduled to occur May 2004 through November 2005. Potential impacts to noise-sensitive receptors during construction include:

- Convalescent housing located 600 feet to the northwest may experience levels of 43 to 73 dBA.
- Residences located 300 feet to the west (Buildings 9 and 10) may experience levels of 49 to 79 dBA. The intervening buildings, Buildings 1, 7, and 8, may serve to reduce these noise levels.
- Residences located 510 feet to the north may experience levels of 45 to 75 dBA.
- Medical centers located 500 feet to the north, 600 feet to the northeast, and 900 feet to the northeast may experience levels of 45 to 75 dBA, 43 to 73 dBA, and 40 to 70 dBA, respectively.
- Rock Creek School located 1,800 feet to the northeast may experience levels of 34 to 64 dBA.
- Foothill Community Church located 1,000 feet to the southeast may experience levels of 39 to 69 dBA.
- Day use clinic located 1,000 feet to the southeast may experience levels of 39 to 69 dBA.

Most of these noise levels do not exceed 75 dBA. The only potentially significant impacts associated with Phase B occur at the residences located in Buildings 9 and 10. These impacts would only result from construction activities in those portions of the LDB site that have a

direct line of sight to the buildings. Therefore, the impacts would be short-term and adverse, but not significant.

Phase C

Construction of the Auburn Justice Center (AJC). Phase C is scheduled to occur from June 2004 through December 2005. Potential impacts to noise sensitive receptors during construction include:

- Residences located 660 feet to the north may experience levels of 43 to 73 dBA
- Residences located 600 feet to the south may experience levels of 43 to 73 dBA
- Existing shelter located 300 feet to the east may experience levels of 49 to 79 dBA. This building is separated from the project site by two other buildings, therefore the actual noise levels at the shelter are anticipated to be lower.
- Existing Sierra Council on Alcoholism treatment center located 240 feet to the east may experience levels of 49 to 79 dBA. This building is separated from the project site by one other building, therefore the actual noise levels at the shelter are anticipated to be lower.
- Minimum Security area located 290 feet to the southeast may experience levels of 50 to 80 dBA. This building is located slightly lower in elevation than the project site, and line-of-sight between this building and the project site is partially blocked. These conditions will serve to lower the actual noise levels at this building.
- Main Jail located 50 feet to the southeast may experience levels of 65 to 95 dBA, however as the housing units of the jail are not located adjacent to the construction site and there are no windows facing the site, this is not considered to be a significant impact requiring noise attenuation.
- Juvenile Hall located 120 feet to the west may experience levels of 57 to 87 dBA, however as the housing units of the juvenile hall are not located adjacent to the construction site and there are no windows facing the site, this is not considered to be a significant impact requiring noise attenuation.

Some of these noise levels exceed 75 dBA, but most will be lowered by blocks in the line-of-sight between the project site and the affected noise-sensitive receptors. The existing shelter and Sierra Council on Alcoholism treatment center will only experience significant noise impacts when construction activities are occurring in the area of the project site closest to Richardson Drive, and therefore closest to the shelter and treatment center. Significant impacts requiring noise attenuation associated with Phase C are not expected to occur.

Phase D

Rough site grading and provision of infrastructure for the Children's Emergency Shelter and Women's Center (CES and WC). Phase D is scheduled to occur from July 2004 through November 2005. Construction of these facilities is not included in the currently proposed project, but is expected to occur as a result of the project. Construction of the CES is anticipated to occur between May 2005 and May 2006, while construction of the WC is expected between August 2004 and November 2005. Additional project-level environmental review will be

conducted for each construction project. In order to provide a programmatic level of assessment of the anticipated future construction, this analysis includes evaluation of the potential impacts of construction. Potential impacts to noise sensitive receptors during Phase D and future construction include:

- Residences located 90 feet to the south may experience levels of 60 to 90 dBA
- Residences located 600 feet to the north may experience levels of 43 to 73 dBA
- Residences located 1,200 feet to the northeast may experience levels of 37 to 67 dBA
- Juvenile Hall located 750 feet to the east may experience levels of 41 to 71 dBA
- Main Jail located 1,100 feet to the east may experience levels of 38 to 68 dBA

Most of these noise levels do not exceed 75 dBA. Significant impacts associated with Phase D are anticipated to occur at the residences located in 90 feet south of the southern portion of the CES site. This will be evaluated during subsequent project-specific environmental review. Mitigation measures for potentially significant impacts will be developed as part of that review.

Phase E

Transfer employees currently occupying the 100 block (B Avenue) to the LDB in November and December 2005. Transfer employees from Buildings 15 through 18 to Buildings 102 through 106 from January 2006 through June 2006. No noise impacts are associated with this activity.

Phase F

Transfer Sheriff's department and portion of the District Attorney and Probation staff from throughout DeWitt to the new AJC from December 2005 through February 2006. Subsequent to this relocation, the demolition of Buildings 1, 7, 8, and three temporary structures can proceed between February 2006 and April 2006. Demolition of Buildings 15 through 18 can proceed from June 2006 through September of 2006. The noise-sensitive receptors and potential impacts are the same as those identified for Phases A and B. Demolition noise levels at the residences in Buildings 9 and 10 are expected to range between 44 and 75 dBA. The parking area of the LDB site will be expanded between March and August 2007. The noise-sensitive receptors are the same as those identified for Phase B. Significant impacts associated with Phase F are anticipated to occur at the residences in Buildings 9 and 10.

Phase G

Phase out the remaining occupancies in Buildings 204B, 205B, 206B, and 207A&B between November 2005 and October 2006. No noise impacts are associated with this activity.

Phase H

Demolition of Buildings 204B, 205B, 206B, and 207A&B from October 2006 through January 2007. Demolition would start with Building 207A&B and move to the west. Potential impacts to noise-sensitive receptors during demolition include:

- Residences located 800 feet to the south may experience levels of 41 to 66 dBA
- Residences located 1,200 feet to the northwest may experience levels of 37 to 62 dBA

- New Faith Community Church located 540 feet to the east may experience levels of 44 to 69 dBA
- O'Brien Child Development Center located 600 feet to the east may experience levels of 43 to 68 dBA
- Charis Youth Center located 440 feet to the east may experience levels of 46 to 71 dBA
- Minimum security area located 300 feet to the south may experience levels of 49 to 74 dBA
- Existing shelter approximately 40 feet west of Building 204 could experience levels of 65 to 95 dBA during demolition of the adjacent buildings. However, the residents of this facility would be transferred to the proposed new WC prior to demolition of the adjacent buildings, thus avoiding any significant impacts.
- Existing alcoholism treatment center approximately 150 feet west of Building 204 may experience levels of 47 to 72 dBA during demolition of Building 207A&B (distance of 375 feet) and levels of 49 to 74 dBA during demolition of Building 206B (distance of 300 feet). These impacts would be less than significant. During demolition of Building 205B (distance of 225 feet), the shelter may experience levels 52 to 76 dBA. During demolition of Building 204B, the shelter may experience levels of 56 to 81 dBA. These noise levels would be attenuated by the intervening buildings, thus reducing the noise levels during demolition of Building 205B to less than significant levels. Potentially significant impacts would occur only during demolition of Building 204B.
- Main Jail located 420 feet to the west may experience levels of 47 to 72 dBA

Significant impacts associated with Phase H are expected to occur only during demolition of Building 204B and to affect only the alcoholism treatment center. Noise attenuation would be required at this site as described in *Mitigation Measure 8.1a.*

Phase I

Phase out the remaining occupancies of Buildings 212A&B through 217A&B from January 2005 through December 2007. No noise impacts are associated with this activity.

Phase J

Demolition of Buildings 212A&B through 217A&B from December 2007 through March 2008. Potential impacts to noise-sensitive receptors during demolition include:

- Residences located 1,200 feet to the southeast may experience levels of 37 to 62 dBA
- Senior Center located 100 feet to the south may experience levels of 59 to 84 dBA
- New Faith Community Church located 100 feet to the south may experience levels of 59 to 84 dBA
- Day use clinic located 100 feet to the north may experience levels of 59 to 84 dBA

- Foothill Community Church located 100 feet to the north may experience levels of 59 to 84 dBA
- O'Brien Child Development Center located 100 feet to the south may experience levels of 59 to 84 dBA. This facility is located in the southern wing of its building. The northern wing will act as an intervening building blocking the line-of-sight between the demolition and this facility. Therefore the noise level at this facility is anticipated to be lower than 75 dBA.

Noise levels exceeding 75 dBA could occur at the Senior Center, the New Faith Community Church, the day use clinic, and the Foothill Community Church. These represent significant impacts of Phase J. In addition, demolition of Buildings 212A&B may generate noise levels between 65 and 90 dBA at Building 211. Building 211 houses the Placer County Elections Division and the Placer County Food Bank. While these are not considered noise-sensitive uses, interior noise levels in excess of 65 dBA make communication difficult, as documented by the EPA research in 1974 cited on page 8-15 of this EIR. With the 25 dBA noise attenuation from exterior to interior noise levels, the levels anticipated within Building 211 during demolition of Building 212A&B are between 40 and 65 dBA. This results in a less than significant impact.

To minimize the potential for adverse impacts, the construction contractor would be required to prepare a Site-Specific Construction Noise Control Plan prior to commencement of demolition or construction activities for project phases expected to generate noise levels at sensitive receptors in excess of 75 dBA. This plan will describe measures to reduce construction/demolition noise to the maximum extent practicable, with the goal of limiting average noise levels over a daily construction shift to 75 dBA. Construction will occur only within the established Placer County construction hours — 6 a.m. to 8 p.m., Monday through Friday and 8 a.m. to 6 p.m. Saturday. Although noise from construction at any one project site could be considered a short-term and adverse but less than significant impact, the proposed project includes construction at several sites and in multiple years. Therefore the generation of noise levels exceeding 75 dBA at sensitive receptors identified in this analysis is considered a significant impact of the proposed project. Preparation of a Site-Specific Construction Noise Control Plan for each project phase in which potentially significant impacts are anticipated to occur restricting hours that construction and demolition can take place and requiring provision of noise barriers will reduce this impact to a less than significant level.

8.4 MITIGATION MEASURES

A Substantial Temporary or Periodic Increase in Ambient Noise Levels that Exceed General Plan or Noise Ordinance Standards in The Project Vicinity Above Level Existing Without the Project

Mitigation Measure 8.1a: A Site-Specific Construction Noise Control Plan shall be prepared prior to the commencement of each construction or demolition phase expected to exceed 75 dBA at any sensitive receptors. The plan shall evaluate noise levels of the construction or demolition activity at the above receptors based on the time and duration of specific activities and the specific equipment that will be used by the contractor. The attenuating effects of intervening structures should be considered. The plan shall identify construction hours and specific noise control measures that

would reduce the noise level to 75 dBA or lower at affected receptors. The construction contractor shall consider implementation of the following measures in the construction noise control plan:

- Select equipment capable of performing the necessary tasks with the lowest sound level and the lowest acoustic height possible.
- All construction equipment shall be operated and maintained to minimize noise generation. Equipment and vehicles will be kept in good repair and fitted with "manufacturer-recommended" mufflers.
- Noise barriers are typically used to control noise from construction. A barrier must have sufficient mass to attenuate the low frequency component of the construction equipment; therefore, flexible mat-type barriers would not be adequate. The barrier must be high enough to block the line-of-sight between the noise source and the receptor. Depending on the construction methodology, a barrier can be placed in the near field (close to the noise source) or in the far field (close to the receptor). Barriers are only needed when and where noise levels at a noise sensitive receptor are expected to exceed 75 dBA and where noise levels at a non-noise sensitive receptor are expected to exceed 90 dBA. Barriers do **not** need to be constructed masonry walls or wood fences. They need only to block the line of sight between the noise source and the receptor. They could consist of plywood sheets temporarily placed in the field, parked trucks, or other solid material that blocks the line of sight to the receptor. The plan should identify the proper height, location, and effectiveness of a noise barrier.

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